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LANCASHIRE
COUNTY COUNCIL

LANCASHIRE COUNTY COUNCIL.

EDUCATION COMMITTEE.

TWENTY-FOURTH

ANNUAL REPORT

OF THE

County Medical Officer of Health

AND

School Medical Officer

FOR THE

YEAR ENDED 31st DECEMBER, 1932.

23 OCT 33

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P. E. Meadon, C.B.E., M.A.

MEDICAL STAFF.

(Jointly with the Public Health Department).

County Medical Officer of Health and School Medical Officer:

J. J. Butterworth, M.D., Ch.B., D.P.H.

Chief Assistant County Medical Officers:

F. Hall, M.D., Ch.B., D.P.H. Barrister-at-Law.
E. H. Scholefield, M.A., M.B., Ch.B., M.R.C S., L.R.C.P., D.P.H.

Assistant County Medical Officers:

G. V. Ashcroft, M.D., Ch.B., M.R.C.P., D.P.H.
L. E. H. R. Barker, B.A., M.B., Ch.B., D.P.H.
R. J. Batty. B.Sc., M.D., Ch.B., D.P.H.
W. C. V. Brothwood, M.D., Ch.B., M.M., D.P.H.
Catherine L. Corbett, M.B., Ch.B., D.P.H.
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S. C. Gawne, B.Sc., M.D., B.S., M.R.C.S., L.R.C.P., D.P.H.
Winniefred M. Gray, M.A., M.B., Ch.B., D.P H
H. Holroyd, M.B., B.S., D.P.H. (deceased, October, 1932).
Gladys H. Hutchinson, M.B., Ch.B.
J. R. Jagger, M.B., Ch.B., D.P.H
G. G. Johnstone, *M.C.*, M.A., M.D., B.Ch., D.P.H.
J. H. Porter, M.A., M.B., Ch.B., M.R.C.S., L.R.C.P., D.P.H.
A. V. Stocks, M.A., M.B., B.Ch., D.P.H.
J. A. Tomb, M.B., Ch.B., D.P.H.
C. Robertson Wilson, M.B., Ch.B., D.P.H.
G. G. Wray, M.D., Ch.B., D.P.H.
S. N. Wright, M.Sc., M.B., Ch.B., D.P.H.

Dental Surgeons:

R. Ackers, L.D.S.
H. J. Appleyard, L.R.C.P., L.R.C.S., L.D.S.
Margaret E. Caldwell, L.D.S.
J. B. Davies, L.D.S.
F. J. W. Dewhurst, L.D.S.
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F. D. Manners, L.D.S.
E. V. Pollitt, L.D.S.
A. W. Poole, L.D.S.
A. E. Shaw, B.D.S.
T. H. Wignall, L.D.S.
F. W. Williams, B.D.S.
A. Cleaver, L.D.S. (part-time)

Ophthalmic Surgeons (part-time):

E. Allan, M.B., Ch.B.
H. H. Bywater, M.D., Ch.B., D. Ch.O., F.R.C.S (Edin.).
O. M. Duthie, M.D., Ch.B.
G. A. Jelly, F.R.C.S., L.R.C.P., L.S.A., D.P.H.
N. MacInnes, M.A., M.B., Ch.B.
J. M. Morrison, M.B., Ch.B.
H. G. Parker, F.R.C.S.(Edin.), L.R.C.P., L.R.F.P.S. (deceased, February, 1933).
J. F. Penman, M.B., Ch.B.
G. A. Renwick, M.B., Ch.M.
T. Snowball, M.A., M.B., Ch.B.
W. Sykes, L.R.C.P., L.R.C.S., L.R.F.P.S.
J. M. Wishart, M.B., Ch.B., F.R.C.S.(Edin.).

Dr. J. G. Wilson, Assistant County Medical Officer, resigned on his appointment to be Medical Officer of Health to the County Borough of Dewsbury.

Miss E. Knowles, School Nurse and Health Visitor, resigned owing to ill-health and received a disability pension.

Drs. G. V. Ashcroft and R. W. Eldridge were appointed to fill the vacancies created by the promotion of Dr. F. Hall to the post of a Chief Assistant Medical Officer and by the resignation of Dr. J. G. Wilson.

The vacancy caused by the death of Dr. Holroyd has not yet been filled.

The Nursing Staff has increased by one, due to the inclusion of the Prestwich Urban District in the County Scheme for Maternity and Child Welfare, and at the end of the year numbered 63, together with 4 Orthopædic Nurses.

CO-ORDINATION OF THE WORK OF THE SCHOOL MEDICAL SERVICE WITH THAT OF OTHER HEALTH SERVICES.

The County Medical Officer of Health is School Medical Officer and Chief Medical Officer to the Public Assistance Committee. There are two Senior Assistants under him whose departmental duties are those of :—

1. (*a*) School Medical and Child Welfare Services.
   (*b*) Blind Persons Act.
2. (*a*) General Public Health.
   (*b*) Public Assistance.
   (*c*) Midwives Acts.

One woman Assistant Medical Officer is fully employed in the inspection of secondary school girls. The remaining Medical Officers are normally 18 in number, and in their dual capacity of Assistant Medical Officers of Health and Assistant School Medical Officers deal with all the problems of Public Health and School Medical Inspection, except those relating to Tuberculosis.

Co-ordination in this latter branch is, however, maintained both at the Central Office and in the "field" by referring to the Tuberculosis Officer or notifying any cases of doubtful or evident disease respectively.

The School Nurses are also Health Visitors and Inspectors of boarded-out children under Part I. of the Children Act, 1908, and it is unnecessary to add to the account of their duties any more than was contained in the Annual Report of 1930.

The following table shows the work done by the Nurses as Health Visitors during the year 1932 :—

HOME VISITS—	
(*Infants under one year*)—	
No. of 1st Visits	10,924
No. of Re-visits	40,183
(*Children 1—5 years of age*)—	
No. of Visits	32,585
ANTE-NATAL WORK—	
(*Expectant Mothers*)—	
No. of 1st Visits	2,242
No. of Re-visits	2,587
OTHER VISITS—	
Special Visits to Older Children, Medical Officers of Health, &c.	754
Visits to Cases of Ophthalmia Neonatorum and other matters...	241
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Visits to Cases under Children Act, 1908 (Part I.)	282

During the year 2 Child Welfare Centres have been taken over by the County Council, one from a Voluntary Committee, and the other from an Authority whose Maternity and Child Welfare work has been transferred to the County Council, and the list of those which have been established to date is as follows :—

Abram
Adlington
Aspull
Atherton
Audenshaw
Bamber Bridge
Barrowford
Barton
Billinge
Blackrod
Briercliffe
Bromley Cross
Burtonwood
Carnforth
Catforth
Chipping
Church
Clayton-le-Moors
Clifton*
Coppull
Crompton
Dalton-in-Furness
Davyhulme
Droylsden
Failsworth†
Feniscowles
Fleetwood (2)
Flixton
Formby
Haydock
Irlam (2)
Kearsley
Kirkham
Lathom and Burscough
Leyland (2)
Litherland
Littleborough
Little Lever
Longridge
Milnrow
Morecambe
Norden
Ormskirk
Orrell
Oswaldtwistle (2)
Padiham
Penketh
Poulton-le-Fylde
Preesall
Prescot
Prestwich
Rishton
Sabden
Skelmersdale
Standish
Thornton Cleveleys
Tottington
Trawden
Ulverston
Urmston
Walkden
Waterloo
Whalley
Whitefield
Whitworth

* Transferred to Swinton and Pendlebury, 1st April, 1933.
† Transferred to County Council, 1st April, 1933.

With the exception of Morecambe the County Council is also the Education Authority in the districts where these Centres have been established. The Assistant County Medical Officers are, as a rule, in charge of these Centres, but in a few cases the local Medical Officers of Health have remained in charge of the Centres.

In the following districts the Child Welfare and Maternity work is done by the local district Sanitary Authority :—

Ashton-in-Makerfield
Brierfield
Denton
Golborne
Great Harwood
Horwich
Newton-in-Makerfield
Ramsbottom
Royton
Tyldesley
Upholland
Westhoughton

Instruction in Mothercraft continues at certain of the Centres on the lines described in previous Reports.

VOLUNTARY HELPERS.

There are 68 Child Welfare Centres in the County, and at 50 of these assistance is given by Voluntary Workers. The numbers of these workers in each Centre are variable, the smaller Centres having one or two Workers and the larger Centres 14 or 15. At some places the Voluntary Helpers form themselves into a Committee with President, Secretary and Treasurer, and a balance sheet is kept showing the income and expenditure of the voluntary monies. The sources of income are :—

(1) The voluntary payments of mothers for tea and biscuits which are provided out of the voluntary funds.

(2) Jumble sales, Whist drives and Concerts.

(3) Voluntary subscriptions, which are frequently limited to the members of the Committee and the staff at the Centre ; in some cases subscriptions are obtained from local Voluntary Hospital Funds.

The expenditure is usually limited to the purchase of tea, biscuits and groceries, but in some cases a wider outlook obtains and valuable help is given in suitable cases in the way of purchasing extra foodstuffs for the mothers, clothing including clogs, and, in one case, paying for operations, which do not come under the County Scheme.

This supplementary activity of the Voluntary Committee provides the necessary elasticity which makes for the smooth working of any scheme ; local interest and mutual help are stimulated, and make possible that corporate enthusiasm which renders easier and lighter the tasks of Doctor and Health Visitor.

The following table gives a statistical summary of the work done in the Centres during the past year :—

SUMMARY OF ATTENDANCES, &C., AT CHILD WELFARE CENTRES DURING THE TWELVE MONTHS ENDED 31ST DECEMBER, 1932, TOGETHER WITH THE NUMBER OF BIRTHS NOTIFIED DURING THAT PERIOD.

Name of Child Welfare Centre.	No. of Sessions.	No. of Births Notified during the 12 months.	No. of individual children attending.			No. of attendances by children.			No. of attendances by expectant mothers.		No. of attendances by other women.	
			Under 1 year old.	From 1—2 years old	Over 2 years old.	Under 1 year old.	From 1—2 years old	Over 2 years old.	No. of individual expectant mothers attending.	No. of actual attendances.	No. of individual women attending.	No. of actual attendances.
Abram	25	117	133	62	74	1067	332	395	27	79	9	25
Adlington	48	54	66	63	84	846	677	1275	18	154	21	286
Aspull (New Springs) ...	49	113	116	49	19	942	366	83	38	156	15	25
Atherton	47	268	256	164	92	2279	585	234	41	194	...	...
Audenshaw	49	86	123	93	83	1600	1014	594	16	70	11	35
Bamber Bridge ...	48	76	139	93	83	1290	652	487	30	157	94	390
Barrowford	49	38	87	67	57	795	266	283	2	5	18	24
Barton	12	7	47	43	46	170	106	73	4	8	9	67
Billinge	49	62	60	36	38	404	249	208	8	41	3	7
Blackrod	49	42	59	35	17	714	378	94	10	43	14	36
Briercliffe	25	13	36	34	40	336	168	306	1	2	5	6
Bromley Cross ...	48	9	104	80	87	882	290	274	23	111	...	...
Burtonwood	48	33	47	28	25	608	306	144	6	37	10	24
Carnforth	49	49	78	57	54	580	396	321	9	37	...	...
Catforth	13	5	25	19	18	98	47	41	5	15	10	36
Chipping	23	5	11	17	20	68	112	97	3	6	12	67
Church	47	51	127	83	64	1850	754	518	7	66	10	178
Clayton-le-Moors ...	46	96	96	49	47	1315	600	435	13	145	36	434
Clifton	49	40	68	32	9	1014	382	77	7	32	...	...
Coppull	48	64	107	62	111	1278	775	944	28	133	10	410
Crompton	48	129	169	104	72	1976	1000	637	13	78	...	...
Dalton	49	156	218	138	204	1574	965	1287	90	401	...	...
Davyhulme (No. 1) ...	44	62	74	50	43	539	417	191	8	26	19	24
Davyhulme (No. 2) ...	49	123	120	72	69	1518	690	451	12	74	35	95
Droylsden	89	179	278	117	75	3656	961	384	22	61	11	71
Feniscowles	49	7	39	27	17	328	222	122	2	4	9	48
Fleetwood (No. 1) ...	49	423	211	101	132	2162	673	672	10	49	1	1
Fleetwood (No. 2) ...	48	...	277	144	144	2684	1097	1001	12	39	...	...
Flixton	44	116	161	103	119	1730	844	852	16	127	20	231
(*a*) Formby...	29	53	35	23	34	317	147	197	3	8	1	2
Haydock	50	197	150	58	31	1818	459	178	29	116	5	19
Irlam (Long Lodge) ...	25	212	155	91	13	1325	730	104	11	33	20	313
Irlam (Irlam Hall) ...	24	...	155	65	8	1098	415	26	9	30	30	401
Kearsley	49	127	215	140	91	3048	842	176	42	172	...	...
Kirkham	49	58	157	126	75	1603	953	443	11	47	21	45
Lathom and Burscough	48	115	72	48	46	601	175	197	6	20	7	184
Leyland (Brad. St.) ...	23	149	11	10	15	77	63	112	1	8	20	255
Leyland (Quin St.) ...	45	...	191	121	115	1869	790	1052	11	78	9	290
Litherland	49	238	263	105	161	2558	696	928	14	40	...	...
Littleborough	49	137	213	121	102	2637	832	506	6	19	2	6
Little Lever	49	53	92	49	26	1217	472	223	26	127	27	306
Longridge	48	61	123	99	101	1044	489	437	9	44	11	403
Milnrow	49	96	103	60	52	1409	435	426	5	14	6	20
Morecambe	48	280	218	113	79	2062	1149	590	30	116	...	...
Norden	49	34	71	38	49	1115	495	551	8	37	19	28
Ormskirk	47	123	139	68	75	1451	548	537	21	67	...	...
Orrell	49	106	124	65	71	1357	664	713	16	95	9	27
Oswaldtwistle	47	216	137	53	23	1526	633	747	22	52	54	535
Oswaldtwislte(Belthorn)	4	...	9	5	10	16	11	14	2	3	9	14
Padiham	48	158	111	72	57	1332	715	402	5	13	28	50
Poulton-le-Fylde ...	25	35	58	31	77	478	205	577	12	25	20	34
Preesall	24	19	61	49	71	437	322	647	8	17	15	232
Prescot	90	183	362	226	182	2462	606	491	89	263	18	91
(*b*) Prestwich	12	59	62	15	10	301	49	12	...	...	...	...
Rishton	48	80	54	32	40	668	261	262	9	34	23	142
Sabden	24	15	25	21	27	157	129	202	4	8	10	20
Skelmersdale	49	95	97	63	55	1235	478	286	4	18	30	155
Standish	49	111	146	91	88	1604	755	803	24	73	42	127
Thornton	47	104	106	81	124	865	600	861	19	148	7	21
Tottington	49	54	86	45	63	995	385	516	13	86	7	105
Trawden	49	23	39	35	57	422	155	212	2	2	19	26
Ulverston	48	116	186	112	160	1869	1160	1338	65	375	...	...
Walkden	49	158	151	62	35	1466	316	122	7	18	47	199
Waterloo	26	23	66	40	51	578	331	246	11	22	29	36
Whalley	48	12	60	52	41	629	451	235	7	34	14	241
Whitefield	44	139	237	97	87	2112	754	455	18	34	...	...
Whitworth	49	130	118	51	41	1826	599	409	17	75	17	32
TOTAL	2898	6192	7990	4655	4366	81887	34593	28713	1077	4721	958	6879

(*a*) Formby Child Welfare Centre taken over from the local Voluntary Committee, 1st July, 1932,
(*b*) Prestwich Child Welfare Centre taken over from the Prestwich Urban District Council 1st October, 1932.

There is still very much unemployment in this part of the country, and, consequently, there is a large quantity of milk or milk products supplied free, at, or through, the Welfare Centres to necessitous nursing mothers, women in the last few months of pregnancy, and infants and young children; and during the year £10,500 was so spent. This is a slight increase on the previous year's expenditure. The conditions under which a free supply is given are those of medical necessity coupled with the inability to purchase the necessary foodstuffs.

During the year 1932, 875,615 pints of fresh milk were supplied directly to the recipients by milk purveyors, and the following tabular statement shows the amount of dried milks, cod liver oil, Virol, etc., supplied at the Centres :—

No.	Units.	Article of Foodstuff.	Cost.		
			£	s.	d.
41,169	1 lb. packets	Cow and Gate (F.C.)	2,783	12	10
19,884	1 lb. packets	C.L.O. and Malt	600	2	1
10,630	8 oz. tins	Virol	532	11	0
9,977	1 lb. tins	Ostermilk	761	18	4
4,468	1 lb. bottles	Horlick's Malted Milk	563	3	4
2,950	8 oz. tins	Ovaltine	183	7	5
2,530	1 lb. packets	Cow and Gate (H.C.)	171	8	2
2,313	4 and 8 oz. bottles	Aberdeen Emulsion	89	2	5
2,295	1 lb. packets	Ambrosia	171	15	0
2,154	4 oz. bottles	Cod Liver Oil	47	4	4
1,878	1 lb. packets	Glaxo	142	14	0
1,865	1 lb. packets	Trufood (Humanised)	188	6	8
1,616	8 oz. and 1 lb. bottles	C. L. Oil Emulsion	91	2	10
1,602	1 lb. packets	Lactogen	120	16	0
1,571	7 oz. tins	Virolax	79	5	10
872	1 lb. packets	Trufood (F.C.)	66	13	4
846	1 lb. packets	Chocolate Milk	63	17	0
784	1 lb. packets	Hemolac	64	12	4
597	8 oz. tins	Maltoline	17	3	0
348	1 lb. bottles	Mellin's Food	38	3	8
333	4 oz. tins	Lactogol	20	5	9
300	1 lb. jars	Vitamalt	20	11	0
54	1 lb. tins	Almata	5	11	10
32	1 lb. tins	New Zealand Cream	4	0	0
24	1 lb. tins	Colact	1	18	0
24	8 oz. & 1 lb. tins	Woodland Milk	1	2	4
14	8 oz. tins	Virol and Milk	0	15	2
12	1 lb. tins	Vitasac	1	7	0
10	1 lb. tins	Jecomalt	0	17	6
			£6,833	8	2

In this statement most of the foods mentioned are sold at cost price. In necessitous cases the food is supplied either free of cost or at half-price. The total loss on the foods supplied amounted to £1,469 5s. 3d., as compared with a total loss in the previous year of £1,222 17s. 11d.

ANTE-NATAL CARE.

The County Council has only one Specialist Ante-Natal Clinic, which is held at the Litherland Child Welfare Centre, but there are arrangements with the following Local Authorities whereby persons resident in the adjacent portions of the County area may attend at the Ante-Natal Clinics established by these Authorities :—Chorley, Eccles, Rochdale and Widnes. There is also a separate Ante-Natal session in connection with the Formby Child Welfare Centre which is attended by the Assistant County Medical Officer in the district. During the year 597 attendances were made at these Ante-Natal Clinics by 205 individual expectant mothers. In the rest of the County, expectant mothers may be seen by the Assistant County Medical Officers at the Child Welfare Centres. Expectant mothers who book beds in Maternity Homes generally attend the Maternity Home for examination some time before admission for the confinement, and in some cases, in-patient Ante-Natal treatment is provided.

A considerable amount of useful work is done by the County Health Visitors. In a scattered country district it is not practicable for expectant mothers to make long journeys to Clinics ; but it would be a mistake to draw the inference that such women receive no attention. In addition to the private doctor and the local District Nurse, the County Health Visitor is now well known in the district and is soon in touch with any one who wishes to see her, thanks to the increasing use of the motor car as a means of transport. As a result much good advice can be given and administrative action taken without the intervention of the *ad hoc* Clinic.

Dr. L. E. H. R. Barker reports on the work done at the Litherland Clinic during the past six years, and Dr. J. R. Jagger on the work done at the Kearsley and Bromley Cross Child Welfare Centres during the year 1932.

Litherland Ante-Natal Centre.

The Litherland Ante-Natal Centre was opened in December, 1926. The sessions are held fortnightly. It is a " Specialist Clinic," in that a Liverpool Obstetric Surgeon (Dr. Burns) attends once a month, the alternate sessions being taken by the Assistant County Medical Officer.

Before its inception in 1926, the local medical practitioners were interviewed ; the County's ideas and aims were explained to them and they were asked to give their views and suggestions. They expressed their approval of the County's scheme.

The local midwives were circularised and invited to come to the Clinic, where the objects of the Lancashire County Council in opening an Ante-Natal Centre were explained to them, and they were invited to co-operate by telling their patients of the advantages of attending.

The Centre was intended to help expectant women whose circumstances were such that they could not afford to pay a fee to a medical practitioner.

The objects of the Ante-Natal Centre may be briefly summarised as follows :—

1.—To provide for the general medical survey and examination of expectant women.

2.—To keep a general supervision over the expectant mother's health during her pregnancy.

3.—To carry out pelvic measurements in all primigravidae and in multigravidae when there is any reason to suspect the presence of pelvic abnormality.

4.—To provide minor medical treatment for disabilities of pregnancy.

5.—To arrange, in conjunction with the County Dental Surgeon, for the treatment or removal of carious teeth.

6.—To take, when necessary, steps to bring the expectant mother's health up to a good standard by extra food, tonics or admission to a Rest Home.

7.—To pass on to midwives or general practitioners advice from the Specialist regarding any abnormality or other condition likely to influence labour.

8.—To arrange for admission of patients to the Liverpool Maternity Hospital on the advice and authority of the Specialist.

9.—To watch the progress of pregnancy so as to take steps to prevent any abnormal difficulty by appropriate measures.

10.—To do all that obstetric knowledge and foresight can devise to assure for the expectant mother a safe labour and a living, healthy child.

At the sessions every effort is made to afford all necessary privacy. Clean dressing gowns are provided and the examinations take place in a warm room with a comfortably furnished couch. In the case of young women who come in the early months of pregnancy efforts are made to remedy any defects in bodily health and necessary dental treatment is carried out. Care is taken not to deter them from continuing their attendances by excessive attention on their first visit. Later on, at a suitable time, pelvic measurements are taken. Any cases requiring special examination of blood or other body fluid (*e.g.*, Wasserman test) are referred to the Liverpool Maternity Hospital.

During the six years, 1927–1932, 410 women attended the Ante-Natal Centre. Of these 127 were primigravidae, and 273 were multigravidae. Ten were found to be not pregnant.

For the first two years there was considerable difficulty in persuading expectant women to attend. The need for ante-natal care was a new idea to most of the people in the district, and time was required to educate them to the necessity for supervision. It was only by constant and strenuous efforts on the part of the Health Visitors that attendances were maintained. As time went on numbers gradually increased. Midwives found that the Clinic helped them, took greater interest in it and brought up more cases. Old patients benefited by the advice and treatment and returned for supervision during their next pregnancy.

Altogether 181 women were brought by local midwives who attended with them and received any necessary medical advice about their cases. Eleven were sent for Specialist's opinion by medical practitioners. The remaining 218 patients either came of their own accord or were persuaded to come by friends who had themselves attended.

It was often found that a patient's first visit was due to some bodily disability ; many of the multigravidae came up because they had had difficult "times" before and hoped that something could be done to give them an easier "time" in their next confinement.

The pathological conditions found ranged from minor skin diseases to severe heart disease. The following is a list of the more common :—

(1) Eczema.
(2) Varicose Veins.
(3) Indigestion.
(4) Dental Disease.
(5) Nephritis and Albuminuria.
(6) Chorea.
(7) Tuberculosis.
(8) Heart Disease.
(9) Contracted Pelvis.

Appropriate measures were taken to deal with these conditions ; simple medicines were prescribed for indigestion, constipation, etc. ; dental disease was dealt with by the Dental Surgeon, who carried out conservative treatment, and also did necessary extractions under general anæsthesia. Of the 81 cases of severe dental caries, 54 were treated. Cases of heart disease, albuminuria and chorea were taken into Rest Homes on the advice of the Specialist. Tubercular patients were referred to the Tuberculosis Department of the County Council for expert advice. Eighteen cases of contracted pelvis were found, three of these being of excessive degree. They were carefully supervised throughout their pregnancy and admitted to Hospital if and when necessary.

Of those admitted to Hospital—

4 were delivered by Induction.
4 by Cæsarean Operation.
3 by Instruments.

The remaining 7 with minor degrees of contraction were delivered normally. One patient underwent Cæsarean section, under spinal anæsthesia, owing to severe heart disease.

Altogether 85 patients were admitted to Liverpool Hospitals during the six years.

25 to Liverpool Maternity Hospital.
43 to Walton Public Assistance Hospital.
4 to other Institutions.

The remaining 13 were taken in for rest or for treatment of some disability of pregnancy, but did not remain in for their confinements.

The Liverpool Maternity Hospital is primarily intended to deal with abnormal cases of labour. It is bad policy to fill up the beds with normal cases. This is not generally understood, and women often apply for admission simply for their convenience, and not because they anticipate any unusual difficulty in their confinement. It has become necessary, therefore, to make it a rule that all women from the Clinic districts who so apply should be referred back to the Clinic, where they are examined by the Specialist, who decides whether they are suitable for admission or not.

Of those admitted to Walton Public Assistance Hospital, many were recommended because their home circumstances proved unsuitable for confinement. Others were admitted under the 1d. in £ scheme, which contributes a sum of money towards the Public Assistance Hospitals. It should be noted that the privilege of admission to hospital under the rules of this scheme is intended to apply only in cases where, in the opinion of a medical man, the labour is likely to be abnormal. It is desirable that this rule should be observed, as otherwise the local midwives are unfairly deprived of much of their normal practice.

Attendance at the Ante-Natal Centre is gradually becoming a more usual procedure among expectant women. In the early days many of the women would only put in one or two attendances ; this was unsatisfactory to the medical attendant and of little use to the patient. Now they attend throughout five or six months of the pregnancy so that there is time to correct defects in the patient's general health, and it is possible to keep watch over the particular state of the pregnancy and take steps necessary to ensure a safe delivery.

The following is a summary of the work of the Litherland Ante-Natal Centre from 1926 to 1932 :—

Total No. of Patients		410
Primigravidae	127	
Multigravidae	273	
Not pregnant	10	
No. who came of their own accord, or brought by friends		218
No. brought by Midwives		181
No. sent by Medical Practitioners		11
No. of cases of normal pregnancy		225
No. of cases with Pathological conditions		175
No. with severe dental disease		81
No. treated by Dental Surgeon		54
No admitted to Hospitals		83

Record of Confinements—

Normal	327
Instrumental	30
Difficult	9
By Induction	4
By Cæsarean Section	5
Miscarriage	8
Twins	9
Still-born	12
No record	17

One patient died in Hospital of Obstetric shock.

KEARSLEY.

Since the year 1925 a time has been reserved at the Kearsley Centre, on Thursday afternoons, for the purpose of examination of pregnant women. The service is a popular one and has grown numerically. Of late years its popularity has increased to such an extent that one has had to refuse the admission to the Centre of all cases except those which reside in the area which the Clinic nominally serves. In this connection one must acknowledge the interest and co-operative effort of the local midwives and doctors.

During the year 1932 forty-two expectant mothers were examined and treated at the Kearsley Centre. Of these 42 cases, thirty-three reside in the township of Kearsley and nine others came from the adjacent rural area of Outwood and Ringley. Seventeen of them were Primiparae and twenty-five Multiparae. Altogether 172 attendances were made by these expectant mothers and at each visit a sample of urine was examined, the process of gestation determined, and advice on any observed abnormal condition given.

The following table shows the abnormal conditions found :—

Vaginal Sepsis			13
Backache			9
Breasts (Mastitis 3, Retracted Nipples 1)			4
Heart Disease			1
Abnormal Blood Pressure			4
Abnormal Urine	Albumin	4	
	Mucin	6	
	Bacilluria	2	12
Abnormal Pelvic Measurements			3
Carious Teeth			11
Pyorrhœa			1
Recurrent Sore Throats			2
Varicose Veins			10
Swelling of Feet			17
Anæmia			3
Enlarged Thyroid Gland			3
Vomiting (severe)			2
Chronic Constipation			7
Hæmorrhoids			3
Furunculosis			1

Where it has been found necessary, Hospital treatment has been found for appropriate cases, while some of the minor conditions have been treated at the Nursing Homes in the district and at the Centre.

There have been no maternal deaths amongst these cases, nor in fact, in the districts served. There has not been any chronic maternal invalidism resulting in any of the 42 cases, and, so far as it has been practicable, post-natal supervision has been given to these mothers for three months after confinement.

There has been one infantile death only, which occurred in a child of 4½ lbs. weight suffering from congenital heart disease. It is interesting to note that this child's mother was one of the two cases who suffered from frequent recurrent sore throat and suggests the possibility of sore throat in the mother being the causative agent of a rheumatic carditis in the fœtus.

Reviewing the items in the table, it is evident that septic conditions are predominant, and were found to be present in 28 of the 42 cases. The problem of attacking the general high maternal mortality rate appears to me to lie in the antenatal control of this group of conditions.

Bromley Cross Centre.

Similar work as at Kearsley is carried out on Monday afternoon of each week at the Bromley Cross Centre. During the year 1932, twenty-three individual expectant mothers were examined and 111 attendances were made. This Centre serves a large rural area outside the Urban District of Bromley Cross and distances and difficulty of transport are factors to be contended with. The 23 cases came from the following districts :—

Bromley Cross	11
Egerton	6
Edgworth	2
Bradshaw	3
Belmont	1

The following abnormal conditions were found in these cases :—

Vaginal Sepsis		10
Backache		3
Mastitis		Nil
Retracted Nipples		1
Heart Disease		1
Abnormal Urine—Albumin	2	
Mucin	3	
Bacilluria	1	6
Carious Teeth		5
Recurrent Sore Throat		1
Varicose Veins		3
Swelling of Feet		4
Anæmia		5
Enlarged Thyroid		3
Chronic Constipation		6
Hæmorrhoids		1
Purulent Otitis Media		1
Gingivitis		1

OPHTHALMIA NEONATORUM.

All cases of Ophthalmia Neonatorum are under observation and care from the onset, and of late years there has been a welcome reduction in the number of those cases which become blind ultimately.

Year.	Total number of Eye Cases reported to the Local Supervising Authority under the Midwives Acts.	Total number of cases notified as Ophthalmia Neonatorum.
1924	328	154
1925	299	147
1926	344	172
1927	381	211
1928	366	191
1929	354	164
1930	312	169
1931	272	120
1932	238	120

The duty of Midwives to report cases of Ophthalmia remains unaltered, the Midwives Act Committee of the County Council being the local Supervising Authority for this purpose.

The Assistant County Medical Officers undertook during the year the inspection of 67 Nursing Homes, the results being reported to the Public Health Department of the County Council.

The following Boroughs and Urban Districts supervise the Maternity Homes in their respective districts :—

Accrington (B.)
Ashton-under-Lyne (B.)
Bacup (B.)
Chorley (B.)
Clitheroe (B.)
Colne (B.)
Darwen (B.)
Eccles (B.)
Heywood (B.)
Lancaster (B.)
Leigh (B.)
Lytham Saint Annes (B.)
Middleton (B.)
Morecambe and Heysham (B.)
Nelson (B.)
Rawstenstall (B).
Stretford (B).
Swinton and Pendlebury U. D.

The service for the actual confinement of women has not continued to expand. During the past year the amount paid in Doctors' fees in cases where the Midwives summoned help was £4,489 10s. 0d., of which £440 12s. 4d. is estimated to be recoverable from the patients. Arrangements are in force for receiving pregnant women, in cases where there is any difficulty, present or anticipated, or where the surroundings at home are not suitable for a confinement, at the following institutions :—

Ashton-under-Lyne Infirmary.
Ashton-under-Lyne Lake Hospital.
Blackburn Corporation (Springfield) Maternity Home.
Blackpool Corporation Maternity Home.
Bolton Corporation (Haslam) Maternity Home.
Bolton Union Townley's Hospital.
Bootle Corporation Maternity Home.
Burnley Corporation (Bank Hall) Maternity Home.
Chorley Hospital.
Chorley Public Assistance Hospital.
Colne Hospital (Corporation).
Davyhulme Park Hospital.
Fulwood Sharoe Green Union Maternity Home.
Leigh Corporation (The Firs) Maternity Home.
Liverpool Maternity Hospital.
Liverpool St. Hilda's Diocesan Maternity Home.
Lytham Hospital.
Nelson Corporation (Fern Lea).
Oldham Corporation (Greenacres).
Preston Royal Infirmary.
Radcliffe Corporation (Bealey).
Rochdale Union, Birch Hill.
St. Annes-on-Sea War Memorial Hospital
Southport Corporation (Christiana Hartley).
Stretford Memorial Hospital
Warrington Corporation (Borough General—Whitecross).
Warrington Corporation (Latchford)
Whiston Infirmary.
Widnes Ethel Gossage Maternity Home.

During the past year the total number of women admitted was 181. This compares with 198, 175, 145, 56, and 51 for the previous five years. In each case an enquiry is made by the Health Visitor into the economic and sanitary circumstances of the homes. During the year the payment for these patients amounted to £1,484 5s. 5d., of which £492 15s. 5d. was recovered from the patients.

The following table shows the improvement in the rate of infant mortality, per thousand births, during recent years in the Administrative County:—

1913 ...	124	1923 ...	80
1914 ...	112	1924 ...	81
1915 ...	119	1925 ...	82
1916 ...	99	1926 ...	80
1917 ...	96	1927 ...	73
1918 ...	100	1928 ...	69
1919 ...	93	1929 ...	84
1920 ...	91	1930 ...	64
1921 ...	88	1931 ..	70
1922 ...	85	1932 ...	67

THE CARE OF DEBILITATED CHILDREN UNDER SCHOOL AGE.

There has been no change in the method of caring for these children since the last report was issued. Facilities exist for their inspection and treatment at Child Welfare Centres, School Clinics, Orthopædic Clinics, Ophthalmic Clinics, Dental Clinics, and at hospitals for the operative treatment of tonsils and adenoids. They are usually seen by the School Nurses and Health Visitors in the course of home visits, and in the mining and manufacturing districts many of them are to be found in school from the age of three onwards. There are now thirty Nursery Classes in the Infant Schools.

During 1932 the School Nurses visited 14,643 separate homes and as Health Visitors made 89,851 visits to homes, etc., and during this year 4,366 children between two and five years of age made 28,713 attendances at the Child Welfare Centres.

Children under the age of three years, and, in exceptional circumstances, from three to five years, can be provided under the County Council Maternity and Child Welfare Scheme with fresh or dried milk, cod liver oil, or Virol, at cost price, less than cost price, or free, when they are certified by the Medical Officers in charge of the Child Welfare Centres to require extra nourishment.

In districts where the County Council is the Authority responsible for Maternity and Child Welfare, no difference is made in practice in the facilities provided for the care and treatment of school children and for those under school age.

Dental treatment is available for expectant and nursing mothers and for children under school age.

SCHOOL HYGIENE.

The new schools provided by the Committee have every facility for a healthy school life which could be demanded reasonably. The older schools, admittedly, are in a much inferior position, but even here the correct use of whatever facilities exist can make up for many deficiencies. A clean, dustless school, with proper spacing of the children is of great assistance in the prevention of infection, coupled with the intelligent observation of slightly ailing children and the rigid exclusion, for an adequate period, of those known to convey infection, *e.g.*, cases of "sore throat." Too great a reliance is frequently placed upon chemical disinfection of the school premises, whereas in fact, the sources of infection are not in the inanimate objects in the school, but in the persons actually in attendance.

Reports are received at every inspection of any defects found in the premises, and the following table shows the improvements which have been carried out during 1932 :—

District No.	Name of School.	Particulars of Improvements.
1	Dalton-in-Furness, Askam Junior and Infants' Council	Reflooring. Provision of Hopper Windows in Classroom.
1	Lower Allithwaite, Cartmel C.E. ...	Reflooring. Surfacing of Playground.
1	Haverthwaite C.E.	Installation of Electric Lighting.
1	Dunnerdale-with-Seathwaite, Seathwaite Parochial	Reflooring.
1	Dalton-in-Furness Chapel Street Council	Renewal of Lavatory Bowls.
1	Dalton-in-Furness, Lindal and Marton Council	Improvement of Water Supply in offices.
1	Dalton-in-Furness Nelson Street (Girls') Council	Renewal of Lavatory Bowls and w.c.
1	Dalton-in-Furness Newton Council	Renewal of Lavatory Bowls, etc.
1	Ulverston Dale Street Council ...	Improvement of Gas Lighting and provision of Sink and Lavatory Basin.
1	Kirkby Ireleth, Grizebeck Council	Enlargement of Window.
2	Priest Hutton C.E.	Removal of Gallery.
2	Carnforth C.E.	Renewal of Staircase.
2	Wray-with-Botton Endowed ...	Surfacing of Playground.

District No.	Name of School.	Particulars of Improvements.
3	Preesall Carter's Charity	Reflooring.
3	Bilsborrow John Cross C.E. ...	Alterations to Playground.
3	Barnacre-with-Bonds, Calder Vale St. John's C.E.	Reflooring.
3	Great Eccleston R.C.	Installation of Electric Lighting.
3	Upper Rawcliffe-with-Tarnacre, St. Michaels-on-Wyre	Reflooring of Room.
3	Nateby Council	Conversion of Earth Closets to W.C.s.
4	Fleetwood St. Mary's R.C. ...	Alterations to Offices.
5	Freckleton C.E.	Reflooring.
5	Marton, Little Marton C.E. ...	Surfacing of Playground.
6	Longridge Alston Lane R.C. ...	Installation of Electric Lighting.
6	Longridge R. Smith's Boys' C.E. ...	Surfacing of Playground.
6	Woodplumption, Catforth Council	Provision of Cycle Sheds.
6	Woodplumpton C.E.	Surfacing of Playground.
6	Ribchester St. Peter's and St. Paul's R.C.	Reflooring.
6	Woodplumpton, Cottam R.C. ...	Provision of New Cloakroom, etc.
6	Fulwood St. Vincent's R.C. ...	Renewal of W.C.s. Installation of Electric Lighting.
9	Great Harwood Parish C.E. ...	Installation of Electric Lighting.
9	Clayton-le-Moors St. Mary's R.C. ...	Reflooring.
9	Church Sacred Heart R.C.	Reflooring.
9	Oswaldtwistle New Lane C.E. ...	Reflooring.
9	Church Ernest Street (Infants') ...	Alterations to Offices.
10	Billington R.C.	Installation of Electric Lighting.
10	Balderstone, Mellor Brook C.E. (Infants')	Surfacing of Playground. Installation of Electric Lighting. Reflooring.
11	Briercliffe Council	Reflooring.
14	Withnell Fold Methodist	Installation of Electric Lighting.
14	Adlington C.E.	Installation of New Lavatory Basins.
14	Withnell United Methodist ...	Installation of Electric Lighting.
15	Leyland St. James' C.E.	Installation of Electric Lighting. Surfacing of Playground.
15	Bretherton Endowed C.E.	Installation of Electric Lighting.
15	Ulnes Walton Council	Provision of Hoppers. Improvements to Ventilation, etc.
15	Hoghton	Installation of Electric Lighting.
15	Brindle St. Joseph's R.C.	Repairs to Floor.
16	Ormskirk, Burscough R.C. ...	Reflooring of Classroom.
16	Ormskirk, Burscough Bridge Methodist	Surfacing of Playground.
16	Skelmersdale Blaguegate Methodist	Reflooring. Installation of Electric Lighting.
16	Skelmersdale R.C.	Installation of Electric Lighting.
16	Bispham Free Grammar	Installation of Electric Lighting.
16	Scarisbrick St. Mary's R.C. ...	Erection of Partition in Science Room.
16	Downholland, Haskayne C.E. ...	Reflooring.
18	Blackrod Parish C.E.	Installation of Electric Lighting.
19	Ashton-in-Makerfield Garswood C.E.	Reflooring.
19	Ashton-inMakerfield, Stubshaw Cross C.E.	Improvements to Heating arrangements.
19	Ashton-in-Makerfield St. Thomas'	Reflooring.

District No.	Name of School.	Particulars of Improvements.
20	Turton, Belmont Council	Resurfacing of Playground.
21	Horwich Lord Street Council	Resurfacing of Playground.
21	Horwich St. Catherine's C.E.	Extension of Cloakroom and provision of Master's Room.
21	Horwich Chorley New Road Council	Inauguration of Nursery Class—improvements consequent thereon.
21	Horwich Old Horwich Boys'	Improvements to Ventilation.
22	Kearsley Mount Methodist	Reflooring.
22	Little Hulton Wharton Presbyterian	Reflooring.
22	Little Hulton Walkden Methodist	Renewal of Geyser.
22	Little Lever Congregational	Reflooring.
22	Little Lever C.E.	Reflooring.
22	Clifton Council	Reflooring.
22	Little Lever Council	Reflooring.
23	Ramsbottom Stubbins Council	Improvement of Offices.
24	Tottington, Hawkshaw Lane C.E.	Installation of Electric Lighting.
25	Whitefield, Stand All Saints' C.E.	Installation of Electric Lighting.
25	Prestwich R.C.	Installation of Electric Lighting.
25	Outwood Ringley C.E.	Renewal of Flooring, Grates and Lavatories.
26	Milnrow C.E.	Installation of Electric Lighting.
26	Whitworth, Facit C.E.	Alterations to Offices, etc.
26	Milnrow, Newhey Council	Resurfacing of Playground.
26	Littleborough, Dearnley C.E.	Provision of New Window.
27	Royton St. Anne's C.E.	Reflooring of Cloakroom.
27	Royton Byron Street Council	Reflooring.
28	Great Crosby C.E. (Boys')	Reflooring.
28	Great Crosby, Halsall Girls' Special Subjects Centre	Reflooring. Installation of Electric Lighting.
28	Great Crosby Halsall Girls'	Improvement to Ventilation.
29	Hale C.E.	Installation of Electric Lighting.
29	Rainhill R.C.	Surfacing of Playground.
30	Haydock Colliery	Installation of Electric Lighting.
30	Earlestown District C.E.	Reflooring.
30	Newton-in-Makerfield St. Peter's C.E.	Reflooring.
30	Burtonwood St. Paul of the Cross R.C.	Reflooring. Installation of Electric Lighting.
30	Woolston-with-Martinscroft, Woolston C.E.	Installation of Electric Lighting.
30	Great Sankey Council	Renewal of Lavatory Basins. Provision of Geyser and Sink.
31	Tyldesley-cum-Shakerley, Mosley Common C.E.	Extension of Heating Surface.
31	Atherton Hesketh Fletcher Senior C.E.	Reflooring. Removal of Galleries. Installation of Electric Lighting.
31	Atherton Bag Lane	Reflooring.
31	Atherton Bolton Road	Reflooring.

District No.	Name of School.	Particulars of Improvements.
31	Atherton Chowbent	Reflooring.
31	Atherton Laburnum Street Infants'	Reflooring of Cloakroom.
31	Atherton St. Richard's R.C. ...	Renewal of Sink and Lavatory Basins.
31	Astley, Marsland Green	Reflooring.
33	Irlam, Cadishead St. Mary's C.E.	Reflooring.
33	Irlam Endowed	Installation of Electric Lighting.
33	Urmston C.E.	Reflooring. Installation of Electric Lighting.
33	Flixton Council	Resurfacing of Playground.
33	Irlam Council	Installation of Electric Lighting.
33	Irlam Central Council	Provision of Platform in Assembly Hall.
35	Denton Russell Scott Council ...	Resurfacing of Playground.
35	Failsworth Holy Trinity C.E. ...	Installation of Electric Lighting.
35	Lees, Leesfield, Parkbridge Works C.E.	Installation of Electric Lighting.
35	Lees, Crossbank, Hey St. John's C.E.	Improvements to Ventilation.
35	Droylsden Fairfield Road Council...	Resurfacing of Playground.

Note.—The item "reflooring" is intended to cover either the whole school floor or a classroom.

ARRANGEMENTS FOR WARMING FOOD AND SERVICE OF MEALS IN SCHOOLS.

Nearly all schools have now facilities for making hot drinks and many of them have also facilities for warming any food which may be brought for the mid-day meal.

In view of the isolated position of many of the schools and the comparatively long distances which some of the children attending such schools have to travel before they arrive, the Education Committee has endeavoured to arrange for facilities to be provided for these children to take their mid-day meal in school. The need for this provision is not now so great in view of the schemes of re-organisation which are maturing, whereby children are transferred from the smaller schools to attend the new or re-organised Senior Schools where ample provision is made for the mid-day meal. Nine applications, as compared with 13 in 1931, were approved for oil or gas cooking stoves, and there are now 160 schools with this equipment, which ensures that the children at these schools may have food warmed and a hot drink provided at mid-day.

MEDICAL INSPECTION.

Arrangements for and Methods of Inspection.

The following Table shows the number of Schools, Departments, &c., on December 31st, 1932 :—

No. of Council Schools	153	
No. of Non-provided Schools	532	
Total number of Schools	——	685
No. of Departments in Council Schools	228	
No. of Departments in Non-provided Schools	683	
Total number of Departments	——	911
Accommodation		201,151
Average number on Roll		128,880
Average Attendance		113,033
No. of Teachers		4,170

The "Routine" groups examined are :—

(1) "Entrants," *i.e.*, those who first enter upon school life and whose ages are usually from 5—6 years.

(2) "Intermediates," *i.e.*, those who have attained the age of 8—9 years.

(3) "Leavers," *i.e.*, those of 12—13 years.

In addition to these "Routine" groups there are "Specials" of other ages who are presented by Teachers, School Attendance Officers, Parents, or picked out by Medical Officers and Nurses for some special defect, and finally there are re-examinations of those found at a previous examination to need treatment or observation for a variety of defects.

Included in the groups of "Specials" or re-examinations are those children seen at School Clinics by the Medical Officers. Any parent who wishes to be present at the examination of his or her child may do so, but accommodation is limited, and, usually only those parents come who are sent for by the Medical Officer on the discovery of some defect which requires correction.

The following tables show the work done in Elementary Schools by the Assistant Medical Officers and Nurses during 1932 :—

ROUTINE MEDICAL INSPECTION OF ELEMENTARY SCHOOLS.

No. of Schools visited		567
No. of Departments visited		734
No. of " Entrants " examined—		
Boys	5,846	
Girls	5,514	
		11,360
No. of " Intermediates " examined—		
Boys	5,485	
Girls	5,464	
		10,949
No. of " Leavers " examined—		
Boys	5,347	
Girls	5,508	
		10,855
No. of " Specials " examined—		
Boys	3,592	
Girls	3,906	
		7,498
No. of Children examined (" Entrants," " Intermediates," " Leavers," and " Specials ")—		
Boys	20,270	
Girls	20,392	
		40,662
No. of Children re-examined		15,606
No. of Parents interviewed as part of the systematic inspection		4,884
No. of Homes visited		182

The above table refers only to the work done at routine medical inspections.

The following table shows the work done in Elementary Schools, etc., by the Medical Officers at visits other than routine visits :—

No. of re-visits paid to schools	653
No. of re-inspections of children at re-visits to Schools, or at School Clinics	27,085
No. of examinations of "Specials" at re-visits to Schools, or at School Clinics	21,355
No. of interviews with parents at re-visits to Schools, or at School Clinics	25,227
No. of visits to homes	679

The following table shows the work done in Elementary Schools by the Nurses ; it does not include visits or work done when they were accompanying the Medical Officers :—

No. of visits paid to schools	4,428
No. of examinations of children in schools	196,983
No. of examinations of verminous children... ...	8,853
No. of examinations of children with ringworm ...	248
No. of interviews with parents at school	1,404
No. of visits to homes	14,643

The Register of Defective Children—cripples, blind, deaf and dumb, epileptics and mental defectives—has been kept up-to-date, and the Table will be found at the end of this Report.

The Teachers are extremely helpful in the work of Medical Inspection, and it may now be said that there are few instances in the whole County where the teachers do not take a great interest in the work and render valuable assistance by noting defects and giving what help they can to remedy them.

FINDINGS OF MEDICAL INSPECTION.

The following tables show the findings of the routine medical inspection, *i.e.* the formal and systematic inspection made annually of all the age groups prescribed by the Board of Education.

The first table shows in percentages the results of the inspection of these "Routine" groups only :—

				Entrants. (Ages 3, 4, and 5.)		Inter-mediates. (Age 8.)		Leavers. (Ages 12, 13, and 14.)	
				Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
		No. Examined		5846	5514	5485	5464	5347	5508
		Children having Defects		60·5	60·8	57·4	59·5	46·9	52·7
Mental Condition.		Dull and Backward	T	...	...	...	...	0·02	...
			O	0·9	0·6	1·6	0·9	1·6	0·8
		Feeble-minded	T	0·02	...	...	...	...	...
			O	0·03	0·02	0·2	0·1	0·2	0·07
		Imbeciles	T	...	...	...	...	...	...
			O	...	...	...	...	0·02	0·07
		Idiots	T	...	...	...	...	...	...
			O	...	...	...	...	...	...
		Malnutrition	T	0·2	0·07	0·4	0·1	0·1	0·1
			O	1·2	1·0	2·7	1·8	0·8	1·1
Unclean-liness.		Head	T	0·8	3·8	1·0	3·9	0·4	2·1
			O	1·0	6·9	0·7	10·3	0·4	7·3
		Body	T	0·2	0·5	0·6	0·7	0·4	0·3
			O	0·4	0·5	0·6	0·7	0·7	0·5
Skin.	Ring-worm.	Head	T	0·05	0·05	0·04	0·07	0·02	0·04
			O	0·02	...	...	0·02	...	...
		Body	T	0·03	0·05	0·1	0·02	0·06	0·02
			O	...	...	...	...	0·02	...
		Scabies	T	0·1	0·09	0·04	0·04	0·06	0·04
			O	...	...	...	...	...	...
		Impetigo	T	1·1	1·0	1·0	0·6	0·5	0·3
			O	0·2	0·09	0·1	0·1	0·02	0·07
		Other Diseases (Non-Tubercular)	T	0·9	0·7	0·8	0·8	0·7	0·7
			O	0·7	0·5	0·5	0·4	0·5	0·5
Eye Diseases.		Defective Vision	SP	0·4	0·7	6·7	6·9	6·3	7·4
			O	0·5	0·5	7·7	7·7	7·1	8·4
		Squint	T	0·8	1·1	0·4	0·5	0·3	0·3
			O	1·0	0·9	0·8	1·0	0·6	0·7
		Conjunctivitis	T	0·2	0·2	0·2	0·2	0·3	0·2
			O	0·6	0·6	0·9	0·7	0·7	0·3
		Blepharitis	T	0·8	1·1	0·5	0·8	0·6	0·7
			O	0·4	0·6	0·6	0·7	0·5	0·5
		Keratitis	T	...	...	...	...	0·04	0·02
			O	...	...	...	...	0·02	0·04
		Corneal Opacities	T	0·02	...	0·02	...	0·02	...
			O	0·02	0·02	0·07	0·1	0·1	0·07
		Corneal Ulcer	T	...	...	...	0·02	...	...
			O	0·03	0·04	...	0·05	...	...
Ear Diseases.		Defective Hearing	T	0·2	0·1	0·3	0·2	0·4	0·4
			O	0·1	0·1	0·4	0·3	0·5	0·5
		Otitis Media	T	0·2	0·4	0·4	0·4	0·6	0·5
			O	0·07	0·05	0·09	0·09	0·2	0·09
		Other Ear Diseases	T	0·6	0·8	0·5	0·5	0·7	0·7
			O	0·2	0·2	0·2	0·2	0·3	0·2

				Entrants. (Ages 3, 4, and 5.)		Inter-mediates. (Age 8.)		Leavers. (Ages 12, 13, and 14.)	
				Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Nose and Throat.		Enlarged Tonsils	T	1·8	2·1	1·6	1·4	1·4	1·7
			O	15·1	15·4	9·9	11·7	8·0	9·2
		Adenoids	T	0·2	0·1	0·2	0·2	0·06	0·4
			O	0·8	0·7	0·9	0·7	0·5	0·3
		Enlarged Tonsils and Adenoids	T	2·0	1·8	1·1	1·3	0·6	0·9
			O	2·5	2·5	2·1	1·4	0·8	0·9
		Enlarged Cervical Glands (Non-Tubercular)	T	0·1	0·1	...	0·05	0·06	0·07
			O	13·4	10·7	8·0	6·9	5·9	4·0
		Defective Speech	T	...	0·02	0·02	...	0·02	...
			O	1·1	0·3	0·5	0·3	0·6	0·2
Teeth.		Four or more Carious	T	15·2	14·9	13·2	13·1	6·7	6·9
			O	12·2	11·6	7·5	7·1	2·8	2·2
		Sepsis	T	0·9	1·0	0·7	0·8	0·09	0·7
			O	0·09	0·3	0·1	0·1	0·06	0·04
Heart and Circulation.		Organic	T	0·07	0·04	0·04	0·09	...	0·1
			O	0·4	0·3	0·5	0·5	0·5	1·0
		Functional	T	...	...	...	...	...	...
			O	2·5	2·2	3·7	2·8	2·4	3·4
		Anæmia	T	0·1	0·2	0·09	0·07	0·06	0·1
			O	0·5	0·5	0·5	0·5	0·4	0·3
Lungs.		Bronchitis	T	1·2	1·0	0·4	0·3	0·1	0·2
			O	1·8	3·0	2·5	1·6	1·2	0·7
		Other Non-Tubercular Diseases	T	0·03	0·07	0·04	...	0·02	0·02
			O	0·4	0·3	0·7	0·3	0·3	0·2
Tuberculosis.	Pul-monary.	Definite	T	...	...	...	...	...	...
			O	...	...	...	...	...	...
		Suspected	T	...	...	0·02	...	...	...
			O	...	0·04	0·04	...	...	0·09
	Non-Pulmonary.	Glands	T	0·02	0·02	0·02	...	0·02	0·02
			O	0·02	0·05	0·04	0·02	0·04	...
		Spine	T	...	...	...	...	...	...
			O	...	...	0·04	0·02	0·04	...
		Hip	T	0·02	...	...	0·02	...	...
			O	...	...	...	...	...	0·02
		Other Bones and Joints	T	0·02	...	...	...	0·02	0·02
			O	...	...	0·02	...	0·02	0·02
		Skin	T	...	...	0·02	0·02	0·02	0·02
			O	...	0·02	...	0·02	0·02	...
Nervous System.		Epilepsy	T	...	...	...	...	0·02	...
			O	0·03	0·02	0·02	...	0·09	0·04
		Chorea	T	...	0·02	0·02	0·04	...	0·02
			O	0·05	0·05	0·07	0·09	0·04	0·04
		Infantile Paralysis	T	0·02	0·04	0·02	...	...	...
			O	0·03	0·09	0·05	0·04	0·04	0·05
		Rickets	T	0·1	0·1	...	...	0·02	0·02
			O	1·3	0·7	0·3	0·1	0·04	0·05
Deform-ities.		Spinal Curvature	T	0·03	0·04	0·05	0·1	...	0·07
			O	0·1	0·2	0·4	0·5	0·6	0·3
		Other Forms	T	0·6	0·5	0·5	0·5	0·4	0·8
			O	2·3	1·5	2·2	1·6	2·1	2·3
		Other Diseases or Defects	T	1·5	1·2	1·2	0·8	1·3	1·4
			O	4·2	2·9	3·5	2·5	3·4	4·1

In addition, there is examined carefully a group of children who are known as "Specials." These children do not fall within one of the prescribed age groups, but are specially presented, either at the school or at the school clinic, as possibly having defects, by teachers, school attendance officers, parents, &c.; or are picked out by the medical officer or nurse in a general inspection of the school. The number of "Specials" examined was 28,853.

The following table shows the results of the examination of the "Specials" in 1932 :—

SPECIAL CASES.

				Boys.	Girls.
		No. Examined		14431	14422
		Children having Defects		11597	11666
Mental Condition.		Dull and Backward	T	2	3
			O	97	45
		Feeble-minded	T	1	1
			O	35	12
		Imbeciles	T	3	1
			O	3	2
		Idiots	T	...	1
			O	1	1
		Malnutrition	T	84	72
			O	206	221
Uncleanliness.		Head	T	60	161
			O	107	786
		Body	T	25	25
			O	12	22
Skin.	Ringworm.	Head	T	91	57
			O	...	...
		Body	T	69	55
			O	...	...
		Scabies	T	119	96
			O	2	5
		Impetigo	T	877	668
			O	10	7
		Other Diseases (Non-Tubercular)	T	1022	861
			O	51	45
Eye Diseases.		Defective Vision	SP	690	878
			O	403	460
		Squint	T	142	142
			O	79	72
		Conjunctivitis	T	219	259
			O	40	30
		Blepharitis	T	226	271
			O	28	32
		Keratitis	T	11	21
			O	...	1
		Corneal Opacities	T	3	7
			O	4	8
		Corneal Ulcer	T	22	14
			O	1	...
Ear Diseases.		Defective Hearing	T	135	111
			O	59	42
		Otitis Media	T	384	320
			O	21	15
		Other Ear Diseases	T	225	235
			O	16	18

				Boys.	Girls.
Nose and Throat.		Enlarged Tonsils	T	243	287
			O	440	507
		Adenoids	T	73	78
			O	78	83
		Enlarged Tonsils and Adenoids	T	545	562
			O	221	203
		Enlarged Cervical Glands (Non-Tubercular)	T	103	106
			O	324	312
		Defective Speech	T	6	2
			O	51	28
Teeth.		Four or more Carious	T	514	533
			O	304	268
		Sepsis	T	124	115
			O	4	3
Heart and Circulation.		Organic	T	17	22
			O	48	47
		Functional	T	8	6
			O	373	293
		Anæmia	T	47	68
			O	67	61
Lungs.		Bronchitis	T	180	156
			O	122	110
		Other Non-Tubercular Diseases.	T	40	22
			O	25	30
Tuberculosis.	Pulmonary.	Definite	T	2	...
			O	2	2
		Suspected	T	5	5
			O	7	2
	Non-Pulmonary.	Glands	T	20	16
			O	13	17
		Spine	T	2	1
			O	2	4
		Hip	T	1	5
			O	...	3
		Other Bones and Joints	T	3	6
			O	2	1
		Skin	T	4	...
			O	...	2
Nervous System.		Epilepsy	T	9	5
			O	9	10
		Chorea	T	37	59
			O	22	38
		Infantile Paralysis	T	8	9
			O	10	3
		Rickets	T	16	11
			O	58	31
Deformities.		Spinal Curvature	T	9	20
			O	21	22
		Other Forms	T	93	117
			O	77	82
		Other Diseases or Defects	T	2743	2440
			O	709	821

In addition to the children who were examined at routine, &c., inspections, whose defects are classified in the preceding tables, the Medical Officers re-examined 42,691 children who had been found defective at previous inspections. They also paid 653 re-visits to schools. The classification of these children into age groups or defect categories would serve no useful purpose, and has, therefore, not been made.

REVIEW OF FINDINGS.

MALNUTRITION.

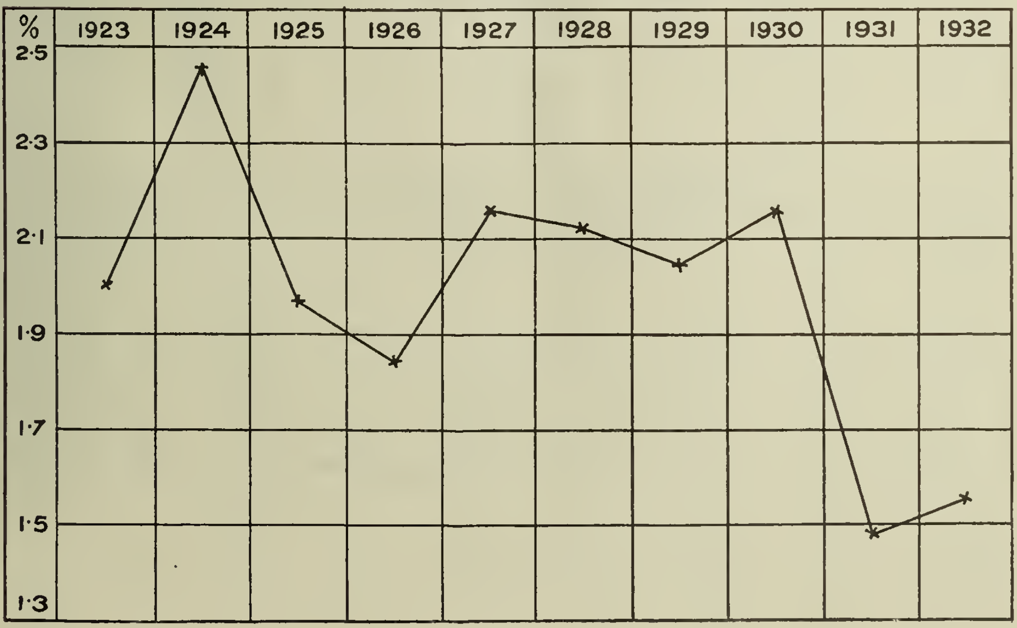
The percentage of children showing malnutrition at the routine inspections in the schools in the year 1932 was 1·55 per cent. amongst the routine groups of entrants, intermediates and leavers. This percentage includes the cases requiring to be kept under observation in addition to those recommended for treatment. The percentage of children in receipt of free meals or milk, cod liver oil, etc., is about 7·75 per cent. of the children on the roll of the Elementary Schools.

The selection of these children for free meals is made on an economic basis in accordance with a scale fixed by the Committee in the year 1929. During the year it was found necessary to allocate a further sum of £5,000 in the estimates for the cost of free meals, and the expenditure under this heading is now at the rate of £25,000 per annum. This sum includes the cost of administration, hire of premises and any other charges in addition to the cost of the food itself. It is quite evident that the expenditure of this money has been of considerable value in keeping down the percentage of malnutrition to the low figures ascertained for this and the previous year, if the routine groups may be regarded as a fair sample of the whole.

The percentages for 10 years are as follows :—

Year.	%
1923	2·0
1924	2·46
1925	1·97
1926	1·84
1927	2·16
1928	2·12
1929	2·05
1930	2·16
1931	1·48
1932	1·55

GRAPH 1 MALNUTRITION—ROUTINE CASES



UNCLEANLINESS.

The percentage of uncleanliness of the head in all children of the routine groups for the year 1932 was 6·41, exactly the same as last year. Of the 2,128 cases seen, 238 were boys, and 1,890 girls. As usual the "intermediate" girls were the worst offenders, and the "leaver" boys the cleanest. The approximate proportions of boys to girls in the three groups were :—

Entrants, 1 boy to 6 girls.
Intermediates, 1 boy to 8 girls.
Leavers, 1 boy to 12 girls.

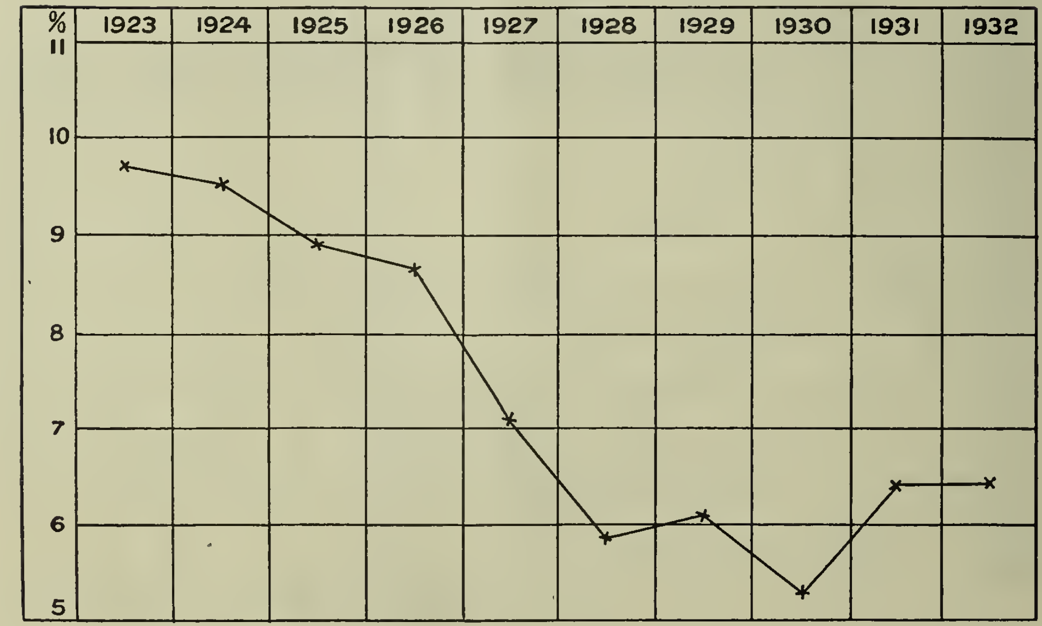
These dirty heads represent all degrees of infestation, and in only about one-third of them can living lice be demonstrated ; even so, these numbers are far too large and call for more exertion than has hitherto been applied.

Verminous conditions of the body were found in 0·99 per cent. of all children examined as routines. This is an increase on last year's figures. The "entrant" boys and " leaver " girls showed the greatest cleanliness in this respect.

The percentages for Unclean Heads and Bodies are as follows :—

Year.	Heads.	Bodies.
1923	9·7	0·84
1924	9·52	0·98
1925	8·93	1·15
1926	8·68	1·15
1927	7·06	1·15
1928	5·85	0·87
1929	6·09	1·12
1930	5·27	1·37
1931	6·41	0·81
1932	6·41	0·99

GRAPH 2 UNCLEAN HEADS—ROUTINE CASES



RINGWORM.

Ringworm of the head was found only in 17 cases amongst the routine groups, giving a percentage of ·051 per cent., but at special inspections, including inspection at Clinics and elsewhere a further 148 cases were found. The time element, of course, enters into the question here, as there is only one routine examination in the year, whereas the special inspections are repeatedly taking place at Clinics and elsewhere. On the assumption that a case of Ringworm lasts for six weeks, there are approximately eight such periods in the year, during any one of which an individual child might be found suffering from Ringworm. These periods are more or less covered by the special examinations, whereas the examination of the routine groups only gives a picture of the state of affairs at any one time. Similar results are found in other diseases of comparatively short duration, and the shorter the duration the greater relatively are the numbers in the special inspections as compared with the routines.

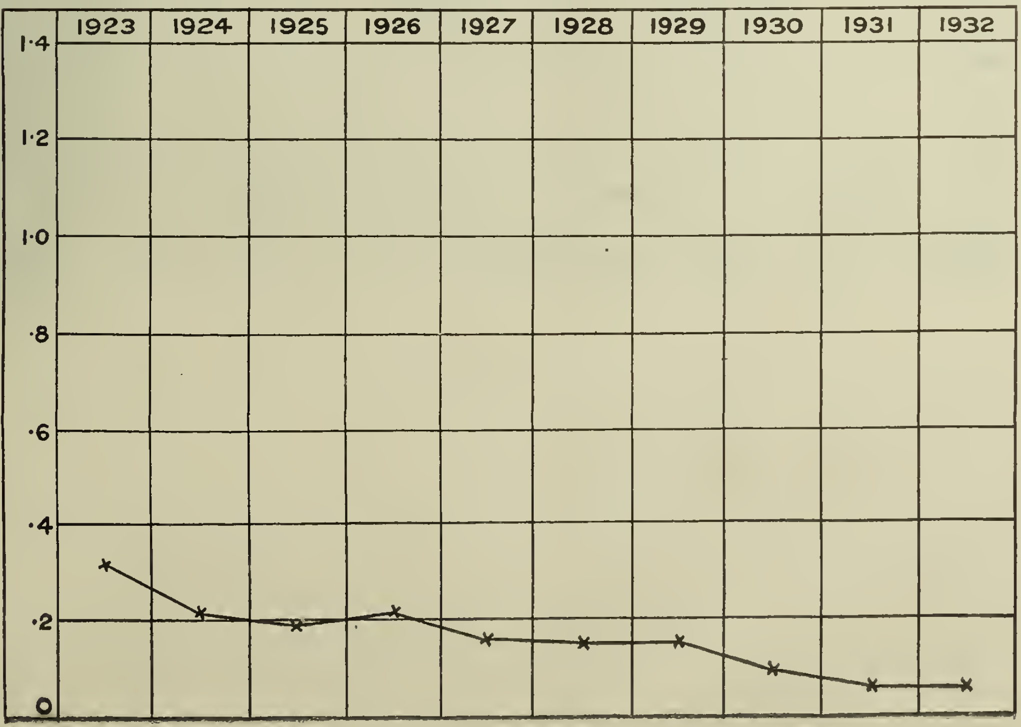
Ringworm of the body shows a somewhat similar incidence, routine inspections providing 0·057 per cent. of cases of body ringworm. In addition 124 cases were found at special inspections. That a close connection between Ringworm of the head and Ringworm of the body exists in this part of the country is shown by an examination of the figures of incidence in the various Clinics attended by 18 different Medical Officers. The correlation between the numbers of Ringworm of the head and body is high (+·908 ±·041). In one district where the incidence of Ringworm is unusually high it has hitherto been the practice to allow the attendance at school of children with affected heads provided that they wear a cap with a washable lining. Although it may be agreed that Ringworm is a trivial disease, it is none the less unsightly and there are not many parents who would willingly allow their children to sit next to a schoolfellow who is known to suffer from the complaint. Treatment by X-rays shortens the period of absence, and exclusion of individual children is preferable to their attendance at school, even when wearing washable caps.

The figures for both defects are given below.

RINGWORM.

Year.	Head.	Body.
1923	0·32	0·121
1924	0·21	0·057
1925	0·19	0·102
1926	0·21	0·076
1927	0·16	0·079
1928	0·15	0·081
1929	0·157	0·071
1930	0·09	0·03
1931	0·06	0·08
1932	0·051	0·057

GRAPH 3 RINGWORM OF HEAD—ROUTINE CASES



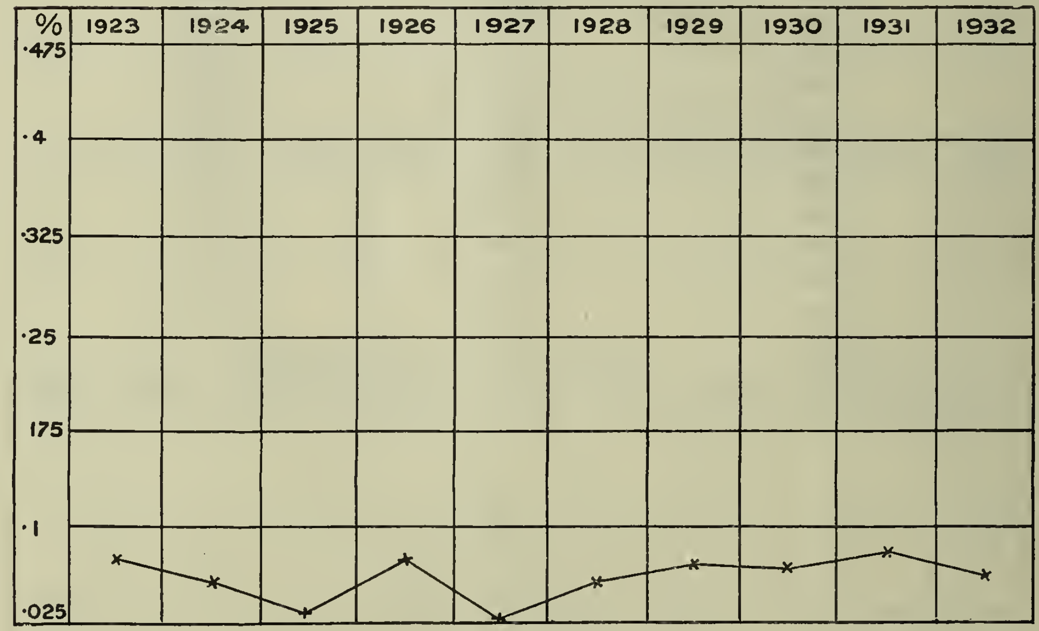
Scabies.

The percentage of scabies amongst routine cases shows little alteration during the last 10 years, but during the year 1932 there were seen at Clinics 215 cases for treatment. At six of the Clinics the incidence of scabies was considerably in excess of that found for the rest of the County, although there appear to be very few districts which are free from the disease throughout the year. These six Clinics served districts in which according to the census figures of 1931, there was overcrowding (*i.e.*, more than two persons to a room amongst the families of the district) in excess of the average for the whole of the Geographical County. There is no evidence that the cases of scabies are directly proportional to the amount of overcrowding and other factors in addition to this enter into the question.

The percentages for " Routine" cases in the last 10 years are :—

Year.	%
1923	0·073
1924	0·057
1925	0·033
1926	0·073
1927	0·026
1928	0·057
1929	0·07
1930	0·066
1931	0·08
1932	0·06

GRAPH 4 SCABIES—ROUTINE CASES



IMPETIGO.

This, at ·85 per cent., remains at nearly the same level as last year and is the lowest level reached for the last 13 years. If, however, we add to the cases found at routine examinations (which only represent the impetigo to be expected at any one time) the cases found at the Clinics, there was a total of 1,845 cases seen during the year.

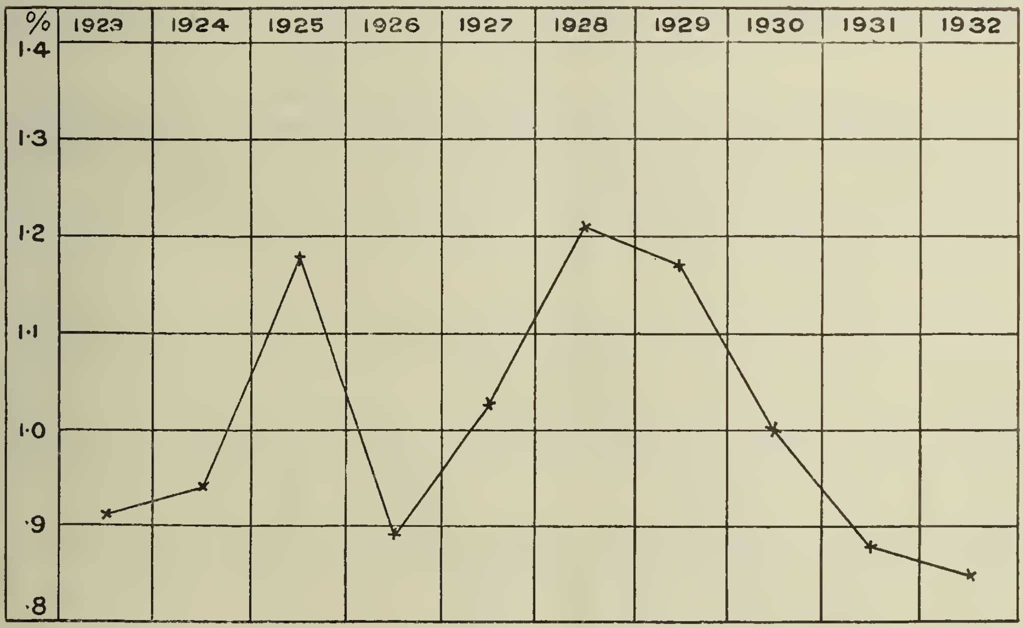
Impetigo is a contagious disease, that is, one which is conveyed by direct contact from one child to another. Frequently the treatment is prolonged and there can be little doubt that in the majority of cases treatment at a School Clinic is highly desirable.

Other and non-tubercular skin diseases show a slight reduction on last year's figures with an incidence of 1·29 per cent. of the routines.

The percentages amongst all " Routine" cases since 1923 are :—

Year.	%
1923	0·91
1924	0·94
1925	1·18
1926	0·89
1927	1·03
1928	1·21
1929	1·17
1930	1·0
1931	0·88
1932	0·85

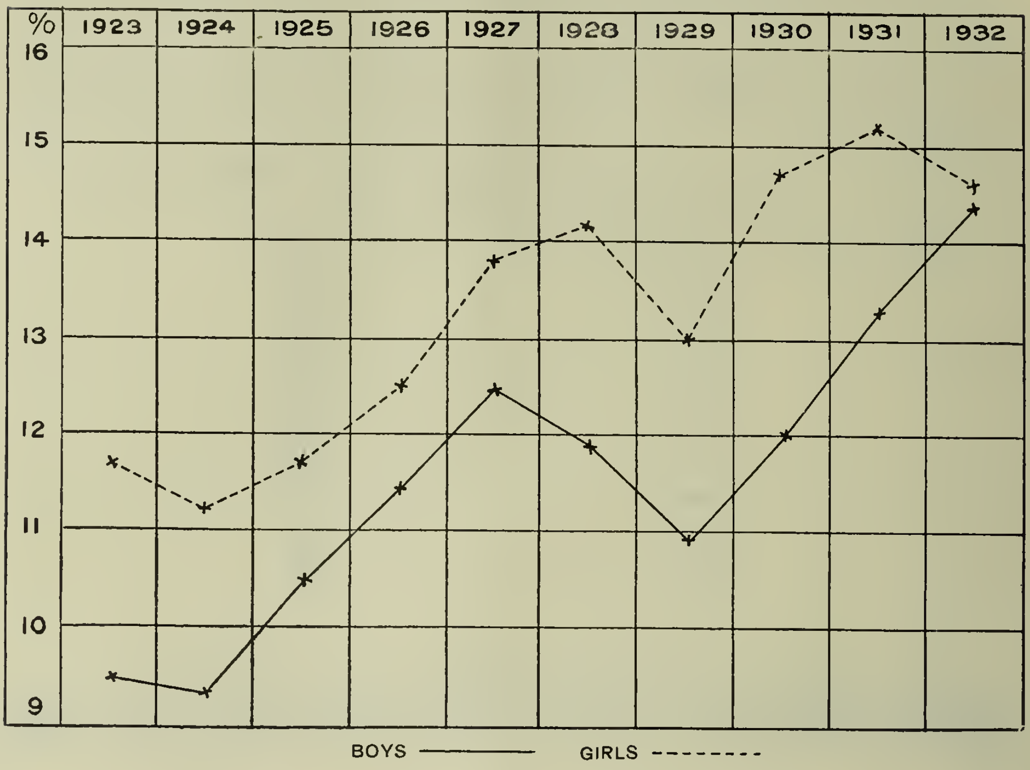
GRAPH 5 IMPETIGO—ROUTINE CASES



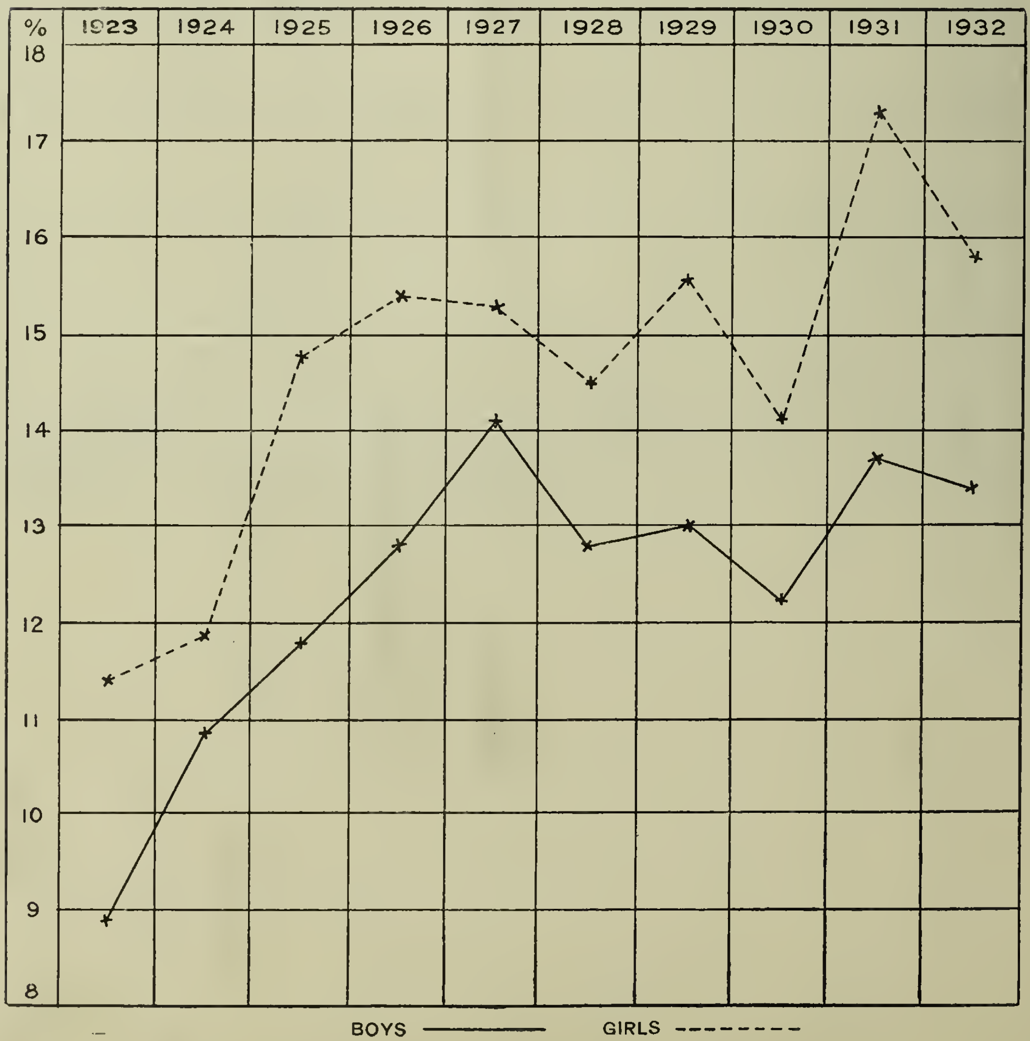
Defective Vision.

The percentages of defective vision amongst intermediates and leavers have again been treated separately. They show on the whole that there is not much difference between intermediates and leavers except that, as usual, the leaver girls show the highest percentage of defect (15·8 per cent.). The records for the past six or seven years indicate that there is a fairly constant level of about 13 per cent. for leaver boys, and about 15 per cent. for leaver girls. These percentages are made up of all forms of defective vision, and it is probable that the increase of leavers over intermediates is due to what may be called the natural growth of the myopic eye, which tends to an increase of myopia with increased growth of the body, many cases of myopia not showing any evidence of the defect until the age of 10—12.

GRAPH 6 DEFECTIVE VISION—INTERMEDIATES



GRAPH 7 DEFECTIVE VISION—LEAVERS



Defective Vision and Squint.

The percentage of intermediates and leavers requiring treatment for these defects is 7·2 per cent., the same figure as ascertained in the previous year, comparing favourably with a percentage of 8·9 per cent. found for the Counties of England and Wales in the year 1931 and a percentage of 10·1 per cent. for the Country as a whole in the same year.

Fifty-four cases of squint were dealt with by operation during the year.

Otitis Media.

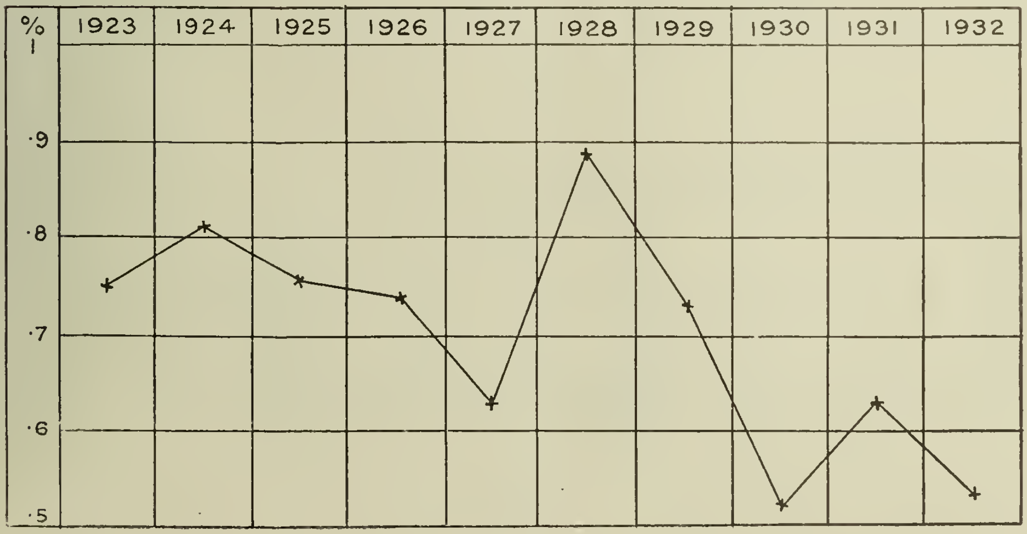
The percentage found at routine inspections has fallen to ·53 per cent. This shows a reduction of nearly 40 per cent. on the amount existing ten years ago. In addition to the cases seen at routine inspections 740 cases were found at special examinations in the Clinics and elsewhere. These latter cases outnumber the cases found at routine inspections by nearly 5 to 1. Many of them are early cases, which yield promptly to the treatment undertaken at the Clinic. For the chronic cases, which are often a source of danger to the patient, arrangements are in force in certain districts for the specialist surgical treatment of the condition.

Two cases received operative treatment for aural defects during the year.

The percentages of " Routine" cases since 1923 are :—

Year.	%
1923	0·75
1924	0 81
1925	0·76
1926	0·74
1927	0·63
1928	0·89
1929	0·73
1930	0·52
1931	0·63
1932	0·53

GRAPH 8 OTITIS MEDIA—ROUTINE CASES



TONSILS AND ADENOIDS.

Taking all forms of abnormalities of the faucial lymphatic ring together the percentage recommended for treatment in the case of routine inspections was 3·14 per cent. for the year 1932. The cases for observation amounted to 13·99 per cent. It will be noticed that the percentage for treatment has risen from 1·65 per cent. in 1923 to the present figure representing an increase of 90 per cent. on the percentage for 1923.

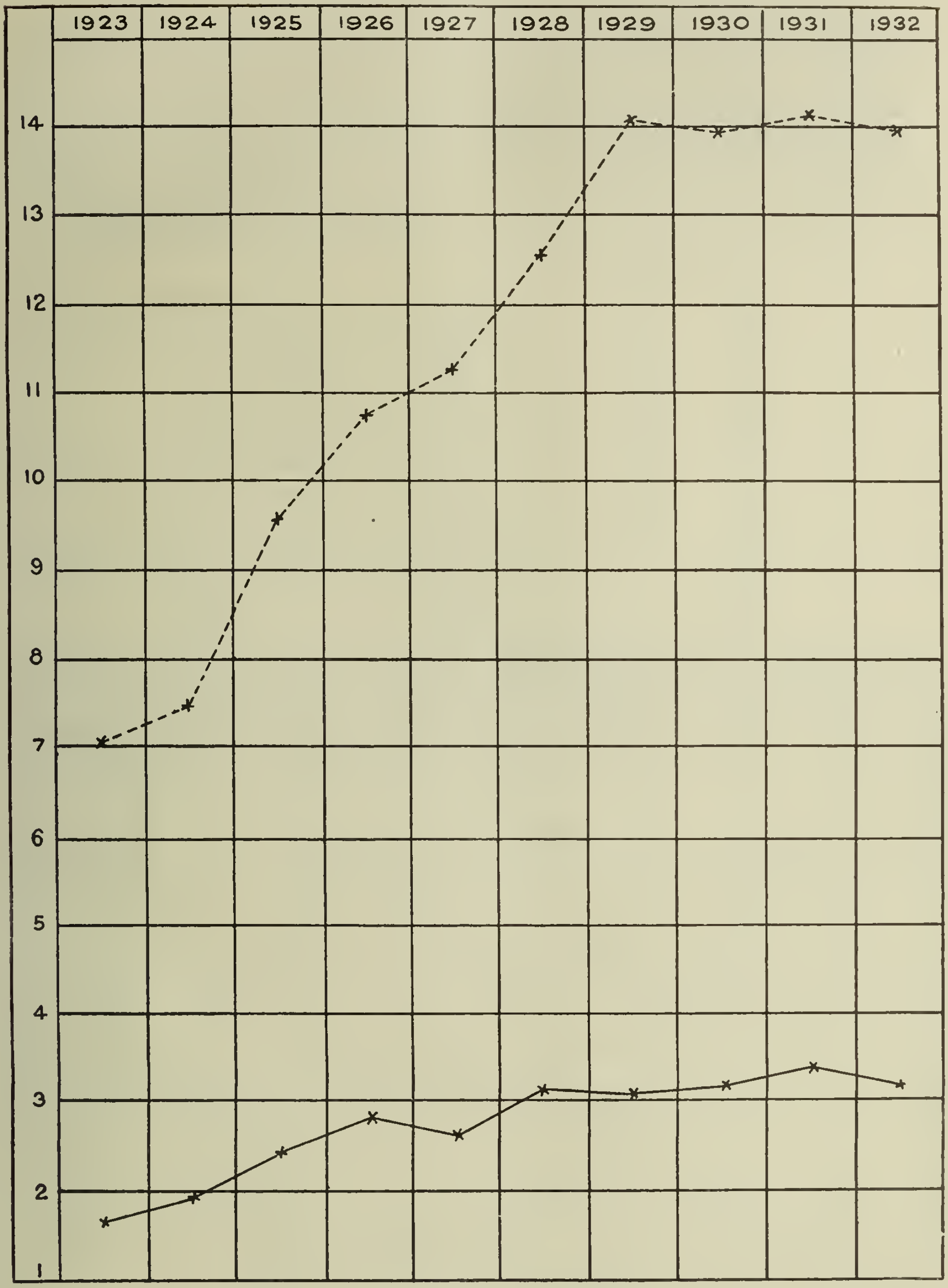
Recommended for treatment does not necessarily mean recommended for operative treatment. During the year a further number of 1,788 cases in all were recommended for treatment at special inspections in the Clinics and elsewhere, giving a total amongst routines and special of 2,831 children recommended for treatment. The number of cases of all ages receiving operative treatment in the year either through the Authority's Scheme or from other sources was 2,157, or 1·9 per cent. per annum of the children in average attendance, and 1·7 per cent. of the children on the roll. At this rate about 15—17 per cent. of children would receive operative treatment for tonsils and/or adenoids at some time during their career as elementary school children. The cases under the County Scheme are all operated on by Surgeons who have special experience of the work.

The usual arrangement with a Hospital is that the child shall be admitted the day before operation and not discharged until the day following; if any special reasons exist the child may be kept in longer. The Surgeon who sees the case is quite at liberty to send the child home if he thinks it does not require operative treatment, but so much care is taken in the selection of cases that this event rarely happens.

The percentages are as follows:—

Year.	Treatment.	Observation.
1923	1·65	7·01
1924	1·93	7·46
1925	2·43	9·59
1926	2·82	10·73
1927	2·61	11·22
1928	3·11	12·57
1929	3·05	14·05
1930	3·16	13·94
1931	3·38	14·11
1932	3·14	13·99

GRAPH 9 ENLARGED TONSILS AND ADENOIDS—ROUTINE CASES



OBSERVATION - - - - - - TREATMENT ————

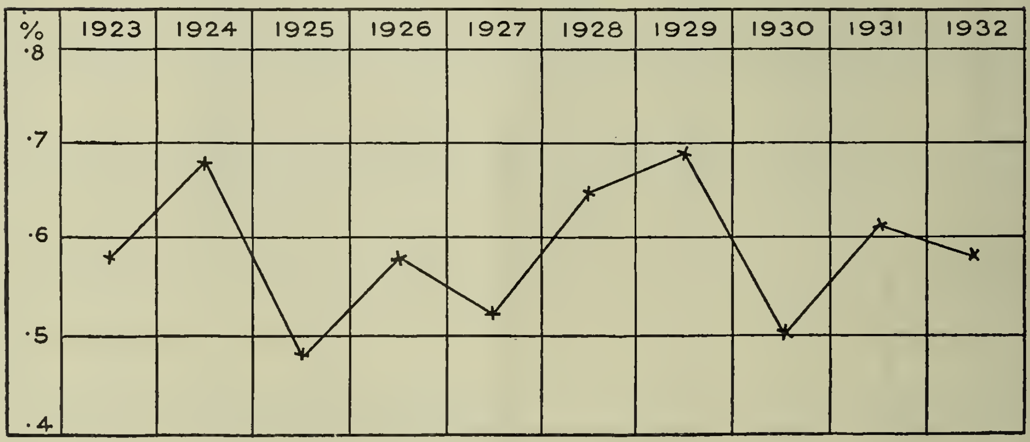
HEART DISEASE (ORGANIC).

There has been little, if any, change in the incidence of organic heart disease amongst the routine examinations for the last ten years, the figure of 0·58 per cent, for 1932 corresponding fairly closely with the average for the longer period. In addition to the cases found at routine examinations there were 134 others discovered at Clinics, making in all a total of 325 children. A satisfactory feature is that of all the children thus examined only 58 needed treatment, the remainder apparently being well compensated and noted for observation only. The tendency of the disease to become more common as age advances is shown by the figures for the girls in 1932, entrants giving a figure of 0·34 per cent., intermediates 0·59 per cent. and leavers 1·1 per cent. The boys show an increase which is not so marked as that in the girls.

The percentages for the 10 years are :—

Year.	Organic.	Functional.
1923	0·58	1·04
1924	0·68	1·14
1925	0·48	1·36
1926	0·58	1·08
1927	0·52	1·78
1928	0·65	2·09
1929	0·69	2·24
1930	0·50	2·92
1931	0·61	2·69
1932	0·58	2·84

GRAPH 10 ORGANIC HEART DISEASE—ROUTINE CASES



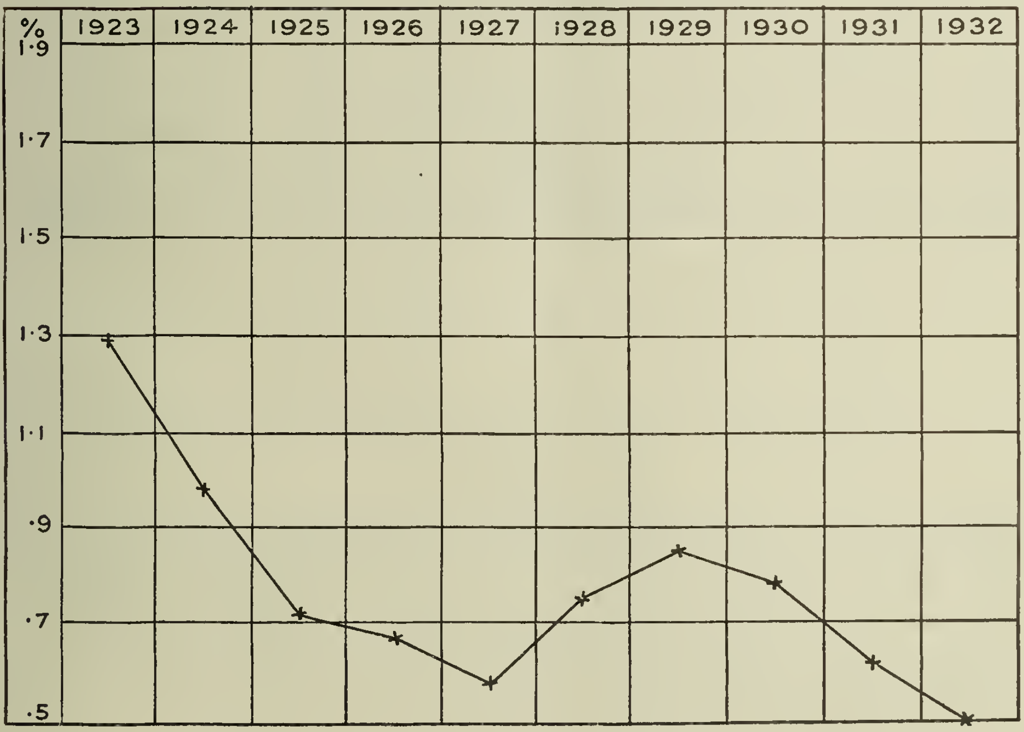
Rickets.

Rickets of the grosser type is becoming rarer. Its occurrence in 1932 was noted in only 0·5 per cent. of routine examinations, the lowest figure for many years past, and this notwithstanding a period of industrial depression of great severity. Read in conjunction with the comparatively low figures for malnutrition it would appear that the health of the elementary school children has not been adversely affected to any noticeable extent by this depression, and that value has been received for the expenditure on the quantity and quality of the food supplied by the Committees dealing with the problem.

The percentages for 10 years are :—

Year.	%
1923	1·29
1924	0·98
1925	0·71
1926	0·67
1927	0·58
1928	0·75
1929	0·85
1930	0·78
1931	0·62
1932	0·5

GRAPH 11 RICKETS—ROUTINE CASES



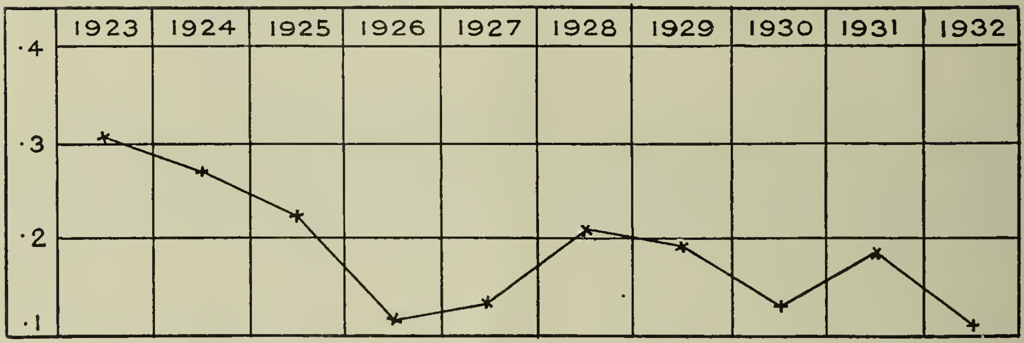
TUBERCULOSIS.

Non-pulmonary tuberculosis has resumed its downward career, and during the past year only 0·11 per cent. of cases were discovered amongst routines, or only about one-third of the number found ten years ago.

The percentages for the past 10 years are :—

Year.	%
1923	0·308
1924	0·272
1925	0·223
1926	0·115
1927	0·132
1928	0·209
1929	0·192
1930	0·129
1931	0·185
1932	0·11

GRAPH 12 NON-PULMONARY TUBERCULOSIS—ROUTINE CASES



VISUAL ACUITY.

The visual acuity of all " Intermediates " *i.e.*, children aged eight years, and all " Leavers " *i.e.*, children aged 12, 13 and 14 years, is tested by means of the Snellen Test Types and the following table summarises the results of these tests :—

		BOYS.		GIRLS.	
		Inter-mediates.	Leavers.	Inter-mediates.	Leavers.
No. Examined		5,455	5,341	5,388	5,478
6	R.	81·7	83·9	80·3	81·1
	L.	80·4	83·1	79·6	79·6
9	R.	8·7	6·3	9·6	7·8
	L.	9·7	7·2	9·9	7·9
12	R.	3·8	3·2	3·5	3·6
	L.	3·6	3·7	3·9	4·1
18	R.	2·5	2·3	3·2	3·0
	L.	2·9	2·4	3·3	3·5
24	R.	1·7	1·9	1·8	2·1
	L.	1·9	1·5	1·8	2·1
36	R.	0·9	1·2	0·9	1·2
	L.	1·0	1·0	0·8	1·2
60	R.	0·4	0·6	0·5	0·8
	L.	0·2	0·7	0·5	1·0
0	R.	0·3	0·6	0·2	0·4
	L.	0·3	0·3	0·2	0·6

CRIPPLING DEFECTS.

The following table shows in percentages the incidence of the principal crippling diseases among the children who were examined in the " Routine " age groups :—

	ENTRANTS.		INTERMEDIATES		LEAVERS.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Tuberculosis of Bones and Joints ...	0·03	...	0·05	0·04	0·07	0·05
Infantile Paralysis	0·05	0·12	0·07	0·04	0·04	0·05
Rickets	1·45	0·85	0·3	0·1	0·05	0·07
Spinal Curvature and other Deformities	3·02	2·23	3·15	2·72	3·06	3·47

The following table shows the position among the group of " Specials " :—

	Boys.	Girls.
No. Examined	14,431	14,422
Tuberculosis of Bones and Joints ...	10	20
Infantile Paralysis	18	12
Rickets	74	42
Spinal Curvature and other Deformities	200	241

The total number of children belonging either to the " Routine " age groups or to the class of " Specials " who were found to be suffering from one of the conditions which produce crippling, is shown below :—

Tuberculosis of Bones and Joints	44
Infantile Paralysis	51
Rickets	281
Spinal Curvature	204
Other Deformities	1214
	1794

It is to be noted that the above table refers to the conditions which produce crippling, and not necessarily to actual crippling; many of the conditions noted require observation only, and not active treatment.

Particulars relating to the number of crippled children of Elementary School age who had definitely been entered on the new register of cripples at the end of 1932 will be found in Table III. of the Appendix.

These figures give a very imperfect idea of the amount of crippling conditions which have to be treated under the Authority's Cripple Scheme ; they take no account of the cripples under school age, and yet the incidence of the principal causes of crippling—tuberculosis, rickets, and infantile paralysis—is largely prior to school age and occurs in the first five years of life.

INFECTIOUS DISEASE.

Of administrative procedures for the prevention of infectious disease the most important are :—

1.—The exclusion of children suffering from, or showing symptoms suggestive of, infectious disease, or who may, it is feared, develop disease after exposure to infection ;

2.—The closure of schools or of departments of schools.

During 1932 it was found necessary to close 69 schools on account of the prevalence of infectious disease. Every endeavour has again been made by the Assistant County Medical Officers to work in close co-operation with the local Medical Officers of Health whenever the closure of a school or department was in question.

The following tables show the numbers of schools which were closed during the year and the causes of closure :—

No. of Schools Closed during 1932 by the Sanitary Authority (Article 22 of the Code).

Measles and Whooping Cough	1
Diphtheria	2
Measles and Chicken-pox	1
Scarlet Fever and Sore Throats	1
Measles	29
Mumps	4
Scarlet Fever	7
Whooping Cough	3
Disinfection	1
Conversion to Water Closets	1
	50

No. of Schools closed during 1932 by the School Medical Officer (Article 23 (b) of the Code).

Chicken-pox	2
Measles, Mumps and Influenza	1
Whooping Cough	1
Measles, Mumps and Whooping Cough	1
Measles	8
Scarlet Fever	6
	19

Frequently requests are made that a school should be closed because the attendance has fallen considerably. The necessity for closure is not always obvious, for in Urban areas the children have opportunities of meeting in other places than the school.

In such cases, however, the School Medical Officer is empowered, under the Education Act, 1921 (Admin. Memo. No. 51, Art. 15), to give certificates to any school or department where the attendance, on account of the occurrence of Infectious Disease, has fallen below 60 per cent. of the number of children on the Register.

The number of such certificates given during 1932 was 410.

EXCLUSIONS FROM SCHOOL.

Article 20 (*b*) of the Code provides for the exclusion of individual children from school on the ground that their exclusion is desirable, either in order to prevent the spread of disease, or on the ground that their uncleanly or verminous condition is detrimental to the other children.

The exclusion of individual children, as distinct from closure of the whole school, is made by the Committee's own staff.

The exclusion by the Assistant County Medical Officers and Nurses is made on a special form in triplicate. One copy is sent to the Central Office for the approval and counter-signature of the School Medical Officer ; another is left in the school as authorisation for the Head Teacher and School Attendance Officer ; and the third is retained by the Medical Officer or Nurse as a record. The exclusions are made for a specified period, and the children are re-examined at the end of the period, and either re-admitted as fit for school or excluded for such further period as may be necessary.

In the following table the number of children excluded under Article 20 (*b*) and the causes of exclusion are shown :—

Uncleanliness.		Scabies.	Ring-worm.	Impet-igo.	Scarlet Fever.	Measles	Mumps.	Diph-theria.	Chicken Pox.	Phthisis	Whoop-ing Cough.	Other Diseases	Total.
Head.	Body.												
293	6	290	107	631	134	75	115	1	170	6	75	1883	3786

FOLLOWING-UP.

During the year the Nurses as School Nurses visited 14,643 homes, and also made 196,983 examinations of school children in school, paying 4,428 visits to the schools, in addition to the visits paid to, and the work done in, the schools when they assisted the medical officers at routine inspections. As Health Visitors they paid 83,692 visits to homes, 4,829 visits to expectant mothers, 251 visits to cases of ophthalmia neonatorum, and 1,079 visits on miscellaneous matters ; in the Child Welfare Centres they saw babies and young children 145,193 times, and expectant mothers 4,721 times.

MEDICAL TREATMENT.

The policy of asking parents to contribute according to their means is still followed. Cases are first of all referred to their own doctor, who treats the case if satisfactory arrangements can be made. If no treatment has been obtained within a month, the case is then referred to the Clinic, when such is available, or to Hospital, as the case may be. A nominal sum is asked for each attendance at the Clinic, but in necessitous cases no charge is made. The consent, in writing, of a parent or guardian is obtained before treatment of any kind is given.

The following table shows the number of attendances made at the various School Clinics during the past year :—

Name of Clinic.	Minor Ailments.				Dental.			Ophthalmic.		Artificial Light.	
	Children of School Age.		Children under 5 and not at School.		Children of School Age.	Children under 5 and not at School.	Nursing and Expectant Mothers.	Children of School Age.	Children under 5 and not at School.	Children of School Age.	Children under 5 and not at School.
	Treatment.	Inspection.	Treatment.	Inspection.							
Ashton-in-Makerfield	2107	1020	8	5	1992	...	...	885	...	...	...
Ashton-under-Lyne	...	...	...	...	...	...	...	...	...	489	205
Atherton	586	629	...	2	1296	13	...	...	...	790	1244
Audenshaw	1982	906	43	42	1904	26	1	402	24	...	...
Carnforth	364	217	39	11	764	2	42	139	7	...	...
Chorley	815	238	78	18	1509	...	1	209	7	521	161
Crompton	1278	777	9	22	1271	8	...	465	9	...	...
Dalton-in-Furness	2691	357	176	13	1068	24	70	195	12	...	...
Davyhulme	489	973	4	16	1692	37	5	280	17	...	...
Droylsden	1289	290	37	14	581	9	...	...	...	...	...
Earlestown	1342	406	5	...	1186	10	4	293	4	...	...
Fleetwood	3777	344	165	28	2937	21	35	515	158	...	...
Great Crosby	...	...	...	...	1055	...	...	...	...	...	...
Haydock	1634	244	12	2	634	30	38	429	36	...	...
Horwich	2816	663	...	...	1156	5	23	266	...	954	...
Irlam	1277	360	13	4	1771	37	16	549	24	...	...
Kearsley	2224	571	35	...	1743	18	13	825	21	...	...
Lancaster	...	...	...	...	...	...	...	20	...	...	...
Leyland	5303	378	471	67	1793	11	15	507	14	...	...
Litherland	2912	964	69	22	1638	64	60	1126	48	...	...
Littleborough	2118	459	19	25	917	11	4	438	68	...	...
Milnrow	1386	159	40	9	612	3	2	...	...	...	...
Ormskirk	2947	78	41	...	685	12	6	...	...	...	...
Orrell	1412	646	5	1	904	7	17	450	21	...	...
Oswaldtwistle	1706	299	16	9	1227	1	18	259	4	...	...
Padiham	1162	179	47	1	1687	...	...	116	18	...	...
Prescot	1851	1577	137	58	2099	108	167	241	13	...	...
Ramsbottom	1139	275	7	7	1523	4	1	375	1	...	...
Rishton	2064	275	70	23	1747	4	...	437	6	...	...
Rochdale	...	...	...	...	...	...	...	182	30	...	...
Royton	4169	1182	...	...	1316	1	...	457	4	...	...
Thornton-le-Fylde	303	30	86	3	...	...	...	...	...	...	...
Tyldesley	1072	600	2	5	2037	7	...	673	...	...	...
Ulverston	2724	466	270	41	1419	25	59	287	56	...	...
Walkden	1114	375	...	4	1725	3	1	300	...	...	...
Westhoughton	985	414	...	...	1537	21	9	225	...	318	...
Whitefield	1863	483	...	...	2463	16	12	651	21	...	...
Whitworth	1666	264	32	19	658	7	1	...	...	...	...
Total	62567	17098	1936	471	48546	545	620	12196	623	3072	1608

Total number of attendances made by children of school age ...	143,479
Total number of attendances made by Child Welfare cases ...	5,803
Grand Total	149,282

The development of Medical Treatment has progressed still further, and since the last Report additional Clinics have been opened at Thornton-le-Fylde, for the treatment of minor ailments, and at Droylsden for the treatment of Defective Vision.

The following is a list of the School Clinics open for treatment at the time of going to press, the kind of work which is undertaken in each being shown :—

Township.	Days and Times of Opening.		Nature of work undertaken.	Remarks.
Ashton-in-Makerfield	Mon.	a.m. & p.m.	Dental	
		a.m. & p.m.	Orthopædic	Nurse only.
	Tues.	a.m.	Minor ailments	
		p.m.	Orthopædic	Surgeon attends second Tuesday in each month only.
	Wed.	a.m.	Ophthalmic	
	Thurs.	p.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
Ashton-under-Lyne (*a*)	Wed.	a.m.	Orthopædic	Surgeon attends third Wednesday (a.m.) in each month only.
	Fri.	a.m.	Orthopædic	Nurse only.
Ashton-under-Lyne (*b*)	Mon. Tues. Wed. Thurs. Fri.	p.m.	Artificial light	Doctor attends Tuesday and Friday only.
Atherton	Mon.	p.m.	Artificial light	
		p.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Minor ailments	
		a.m.	Artificial light	
	Fri.	a.m. & p.m.	Dental	
Audenshaw	Mon.	a.m.	Minor ailments	
	Tues.	a.m. & p.m.	Dental	
	Wed.	a.m.	Dental	
		p.m.	Ophthalmic	Open alternate weeks only.
	Thurs.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Fri.	a.m. & p.m.	Dental	
Burnley	Thurs.	p.m.	Orthopædic	Surgeon attends second Thursday in each month only.
Carnforth	Mon.	a.m.	Minor ailments	Open alternate weeks only.
		a.m. & p.m.	Dental	
	Thurs.	a.m.	Ophthalmic	Open first Thursday in each month only.
	Fri.	p.m.	Minor ailments	Nurse only. Re-dressings.
Chadderton	Wed.	p.m.	Orthopædic	Surgeon attends third Wednesday in each month only.
	Fri.	p.m.	Orthopædic	Nurse only.
Chorley (*a*)	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
	Wed.	a.m.	Ophthalmic	Open alternate weeks only.
	Thurs.	a.m.	Minor ailments	
	Fri.	a.m. & p.m.	Dental	
Chorley (*b*)	Mon. Wed. Fri.	2—3 p.m. Boys 3—4 p.m. Girls	Artificial light	
Crompton	Mon.	a.m.	Ophthalmic	Open alternate weeks only.
		p.m.	Dental	
	Tues.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Thurs.	a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	

Township.	Days and Times of Opening.		Nature of work undertaken.	Remarks.
Dalton-in-Furness	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Dental	
		a.m.	Minor ailments	
	Fri.	a.m.	Ophthalmic	Open alternate weeks only.
Darwen	Wed.	a.m. & p.m.	Orthopædic	Surgeon attends third Wednesday in each month only.
Davyhulme	Mon.	a.m.	Minor ailments	
	Tues.	a.m. & p.m.	Dental	
		p.m.	Ophthalmic	Open alternate weeks only.
	Thurs.	p.m.	Minor ailments	Nurse only. Re-dressings.
	Fri.	a.m. & p.m.	Dental	
Droylsden	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		p.m.	Dental	
	Wed.	p.m.	Dental	
	Thurs.	a.m.	Minor ailments	
	Fri.	p.m.	Ophthalmic	Open monthly.
Earlestown	Mon.	a.m.	Ophthalmic	Alternate weeks only.
		a.m. & p.m.	Dental	
		p.m.	Orthopædic	Nurse only. Alternate Mondays.
	Tues.	a.m. & p.m.	Dental	
		a.m.	Orthopædic	Surgeon attends alternate Tuesdays in each month.
	Wed.	a.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	
Fleetwood	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m. & p.m.	Dental	
		a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
		a.m. & p.m.	Orthopædic	Surgeon attends third Friday in each month only.
		a.m.	Ophthalmic	Open alternate weeks only.
Great Crosby	Tues Thurs. Fri.	a.m.	Dental	
Haydock	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		p.m.	Orthopædic	Nurse only. Alternate weeks.
	Tues.	a.m.	Orthopædic	Surgeon attends alternate Tuesdays in each month.
	Wed.	a.m.	Minor ailments	
	Thurs.	a.m.	Ophthalmic	Open alternate weeks only.
		a.m. & p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
Horwich	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		p.m.	Dental	
	Tues.	a.m. & p.m.	Dental	
		a.m.	Artificial light	
	Wed.	a.m.	Ophthalmic	Open monthly.
		a.m.	Orthopædic	Surgeon attends first Wednesday in each month only. Nurse attends first and fourth Wednesdays.
	Fri.	a.m.	Minor ailments	
		p.m.	Dental	
	Sat.	a.m.	Artificial light	

Township.	Days and Times of Opening.		Nature of work undertaken.	Remarks.
Irlam	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Ophthalmic	Open alternate weeks only.
		a.m. & p.m.	Dental	
		p.m.	Orthopædic	Surgeon attends third Thursday in each month only.
	Fri.	a.m.	Minor ailments	Nurse only. Re-dressings.
Kearsley	Mon.	a.m.	Ophthalmic	
		p.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
		a.m.	Orthopædic	Nurse only.
	Wed.	p.m.	Orthopædic	Surgeon attends first Wednesday in each month only.
	Thurs.	a.m.	Minor ailments	
	Fri.	a.m. & p.m.	Dental	
Lancaster	Tues.	a.m.	Orthopædic	Surgeon attends third Tuesday, alternate months. Nurse attends alternate Tuesdays.
	Thurs.	a.m.	Ophthalmic	Open by arrangement when sufficient number of cases for treatment. Day changed to Monday during summer months.
Leyland	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		p.m.	Orthopædic	Surgeon attends first Monday in each month only.
		a.m. & p.m.	Dental	
	Tues.	a.m. & p.m.	Dental	
	Wed.	a.m.	Ophthalmic	
		a.m. & p.m.	Dental	
	Thurs.	a.m.	Minor ailments	
		a.m. & p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
Litherland	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m.	Minor ailments	
		p.m.	Dental	
	Wed.	a.m. & p.m.	Dental	
		a.m.	Orthopædic	Surgeon attends second Wednesday in each month only.
	Thurs.	a.m.	Ophthalmic	
		a.m.	Orthopædic	Nurse only.
		p.m.	Dental	
	Fri.	a.m.	Minor ailments	
Littleborough	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Wed.	a.m.	Ophthalmic	Open alternate weeks only.
	Thurs.	a.m.	Minor ailments	
Milnrow	Tues.	a.m. & p.m.	Dental	
		a.m.	Minor ailments	
	Fri.	a.m.	Minor ailments	Nurse only. Re-dressings.
Nelson	Fri.	p.m.	Orthopædic	Surgeon attends third Friday (a.m.) in each month only.
Ormskirk (*a*)	Mon.	a.m.	Minor ailments	Medical Officer attends alternate weeks only. (Re-dressings by Hospital staff each day).
	Fri.	a.m. & p.m.	Dental	

Township.	Days and Times of Opening.		Nature of work undertaken.	Remarks.
Ormskirk (*b*)	Tues.	p.m.	Orthopædic	Nurse only, except second Tuesday in each month.
	Fri.	a.m.	Orthopædic	Surgeon attends first Friday in each month only.
Orrell	Tues.	a.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Minor ailments	
	Fri.	p.m.	Ophthalmic	Open alternate weeks only.
Oswaldtwistle	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m.	Ophthalmic	Open alternate weeks only.
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m.	Minor ailments	
	Fri.	a.m. & p.m.	Dental	
Padiham	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
		p.m.	Ophthalmic	Open every third week.
	Thurs.	a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	Nurse only. Re-dressings.
Prescot	Mon.	a.m. & p.m.	Dental	
		a.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
	Wed.	a.m. & p.m.	Dental	
		p.m.	Ophthalmic	Open first and last Wednesday in each month only.
	Thurs.	a.m.	Minor ailments	
		a.m. & p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
		a.m. & p.m.	Orthopædic	Surgeon attends first Friday (p.m.) in each month only. Nurse attends each Friday, except first Friday (p.m.).
Preston	Wed.	a.m. & p.m.	Orthopædic	Surgeon attends fourth Wednesday in each month only.
Ramsbottom	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Tues.	a.m. & p.m.	Dental	
	Wed.	a.m.	Minor ailments	
	Fri.	a.m.	Ophthalmic	Open alternate weeks only.
		a.m. & p.m.	Dental	
Rawtenstall	Wed.	a.m.	Orthopædic	Surgeon attends fourth Wednesday in each month only.
Rishton	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Tues.	a.m.	Ophthalmic	Open alternate weeks only.
		a.m. & p.m.	Dental	
	Wed.	p.m.	Orthopædic	Surgeon attends fourth Wednesday in each month only.
	Thurs.	a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	
Rochdale	Mon.	a.m.	Orthopædic	Surgeon attends each week.
	Fri.	p.m.	Ophthalmic	Open alternate weeks only.

Township.	Days and Times of Opening.		Nature of work. undertaken.	Remarks.
Royton	Tues.	a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
		a.m.	Ophthalmic	Open alternate weeks only.
	Thurs.	a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	Nurse only. Re-dressings.
Skelmersdale	Wed.	p.m.	Inspection	
Thornton-le-Fylde	Mon.	a.m.	Minor ailments	Medical Officer attends alternate weeks.
	Thurs.	a.m.	Minor ailments	Nurse only. Re-dressings.
Tyldesley	Mon.	a.m. & p.m.	Dental	
		p.m.	Orthopædic	Nurse only.
	Tues.	a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
		a.m.	Orthopædic	Surgeon attends second Wednesday in each month only.
	Thurs.	a.m. & p.m.	Dental	
		p.m.	Minor ailments	Nurse only. Re-dressings.
	Fri.	a.m.	Ophthalmic	Open alternate weeks only.
Ulverston	Mon.	a.m.	Minor ailments	Nurse only. Re-dressings.
		a.m. & p.m.	Dental	
	Tues.	p.m.	Orthopædic	Third Tuesday alternate months.
	Wed.	a.m.	Minor ailments	
		a.m.	Dental	
	Thurs.	a.m.	Ophthalmic	Open alternate weeks only.
		p.m.	Dental	
	Fri.	a.m. & p.m.	Dental	
Walkden	Mon.	a.m. & p.m.	Dental	
		p.m.	Ophthalmic	Open alternate weeks only.
	Tues.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m. & p.m.	Dental	
	Fri.	a.m.	Minor ailments	
Westhoughton	Mon.	a.m.	Dental	
		a.m.	Minor ailments	
	Tues.	p.m.	Artificial light.	
	Wed.	a.m. & p.m.	Dental	
		a.m.	Ophthalmic	Open every fourth Wednesday only.
	Thurs.	a.m. & p.m.	Dental	
		p.m.	Minor ailments	Nurse only. Re-dressings.
	Fri.	a.m.	Dental	
		a.m.	Artificial light	
Whitefield	Mon.	a.m. & p.m.	Dental	
	Tues.	a.m.	Minor ailments	
	Wed.	a.m. & p.m.	Dental	
	Thurs.	a.m. & p.m.	Dental	
		a.m.	Orthopædic	Surgeon attends third Thursday in each month only.
	Fri.	a.m.	Ophthalmic	Open alternate weeks only.
		p.m.	Minor ailments	Nurse only. Re-dressings.
Whitworth	Mon.	a.m.	Minor ailments	
	Thurs.	a.m.	Minor ailments	Nurse only. Re-dressings.
	Fri.	a.m. & p.m.	Dental	
Wigan	Mon.	a.m.	Orthopædic	Surgeon attends first Monday in each month only.

Arrangements have been made with the following Hospitals etc., for the treatment of specified classes of defect, those marked with an asterisk being new arrangements made during the year :—

Ashton-under-Lyne Infirmary...	Tonsils and adenoids, refractions, operative treatment of squint, X-ray treatment of ringworm.
*Ashton-under-Lyne Clinic ... (Secondary School cases)	Refractions, teeth.
Blackburn Royal Infirmary ...	Tonsils and adenoids, X-ray treatment of ringworm, refractions, *operative treatment of squint.
Bolton Infirmary	Refractions, tonsils and adenoids, X-ray treatment of ringworm, operative treatment of squint.
Burnley Victoria Hospital ...	Refractions, tonsils and adenoids, operative treatment of squint.
Bury Infirmary	Tonsils and adenoids, refractions, operative tratement of squint, X-ray treatment of ringworm.
Colne Hartley Hospital ...	Refractions, tonsils and adenoids, operative treatment of squint.
Darwen Clinic ... ... (Secondary School cases)	Refractions, teeth.
Davyhulme Park Hospital ...	Tonsils and adenoids.
Fleetwood Hospital	Tonsils and adenoids.
Lancaster Royal Infirmary ...	Tonsils and adenoids.
Leigh Borough Clinic ...	Tonsils and adenoids.
Liverpool Eye, Ear and Throat Infirmary (Myrtle Street)	Tonsils and adenoids, refractions, operative treatment of squint.
Liverpool St. Paul's Eye Hospital ...	Operative treatment of squint.
Manchester Ancoats Hospital...	Aural cases (operative treatment), tonsils and adenoids, crippling defects.
*Manchester and Salford Hospital for Skin Disease ...	X-ray treatment of ringworm
Morecambe Clinic ... ... (Secondary School cases)	Refractions, teeth.
Oldham Royal Infirmary ...	Refractions, operative treatment of squint, X-ray treatment of ringworm, tonsils and adenoids.
Ormskirk General Hospital ...	Tonsils and adenoids, refractions, eye operations.
Preston Royal Infirmary ...	Tonsils and adenoids, X-ray treatment of ringworm, refractions, operative treatment of squint, aural treatment.
Ramsbottom Cottage Hospital ...	Tonsils and adenoids.
Rawtenstall Clinic	Minor ailments, teeth, refractions.
St. Helens Peasley Cross Hospital ...	Refractions, operative treatment of squint, tonsils and adenoids.
Southport Infirmary (Pilkington Road) ...	Tonsils and adenoids.
Stretford Clinic ... ... (Secondary School cases)	Tonsils and adenoids, refractions, aural treatment, teeth.
Ulverston Cottage Hospital ...	Tonsils and adenoids.
Warrington Infirmary ...	Tonsils and adenoids, refractions, operative treatment of squint.
Whiston Infirmary	Operative treatment of squint.
Widnes Accident Hospital ...	Tonsils and adenoids.
Wigan Royal Infirmary ...	Tonsils and adenoids.
Wigan Tower Buildings ...	Refractions.

The following statement shows the number of individual children who received treatment under the Hospital Scheme of the Lancashire County Council during the twelve months ended 31st December, 1932 :—

Disease or Defect.	Elementary.	Secondary.	Child Welfare.	Total.
Enlarged Tonsils and Adenoids ...	1,994	15	97	2,106
Defective Vision	704	69	19	792
Squint	52	1	1	54
Aural	2	...	...	2
Ringworm	31	...	1	32
Teeth	9	22	...	31

The following table shows the number of cases treated at each Hospital or Infirmary with which the Lancashire County Council has made arrangements :—

Hospital, Infirmary, or Treatment Centre.	Tonsils and Adenoids.			Defective Vision.			Squint.			Aural.			Ringworm.			Teeth.		
	E.	S.	C.W.	E.	S.	C.W.	E.	S.	C.W.	E.	S.	C.W.	E.	S.	C.W.	E.	S.	C.W.
Ancoats	74	2	6	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Ashton-under-Lyne ...	70	1	2	17	18	...	1	...	...	...	...	...	...	...	...	...	...	...
Ashton-under-Lyne Clinic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Blackburn	107	...	3	26	3	1	1	...	...	...	...	...	4	...	...	...	...	...
Bolton	271	1	4	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...
Burnley	23	...	1	52	...	2	2	...	...	...	...	...	...	...	...	...	...	...
Bury	17	...	...	1	...	...	...	...	...	...	...	...	10	...	...	...	...	...
Colne	2	...	...	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Darwen	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	1	...
Davyhulme	177	5	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fleetwood	161	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lancaster	17	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Leigh	94	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Liverpool Eye, Ear and Throat	89	1	5	4	...	...	27	1	...	...	...	...	...	...	...	...	...	...
Liverpool St. Paul's ...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Manchester and Salford	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...	...	...
Morecambe	...	...	...	...	12	...	...	...	...	...	...	...	...	...	...	...	11	...
Oldham	56	...	8	59	...	...	9	...	...	...	...	...	...	...	...	...	...	...
Ormskirk	107	...	10	119	8	9	1	...	...	...	...	...	...	...	...	...	...	...
Preston	191	1	9	226	1	6	3	...	1	1	...	...	4	...	1	...	...	...
Ramsbottom	23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rawtenstall	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...
Southport	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Helens	288	...	13	1	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Stretford	...	...	...	...	11	...	...	...	...	...	...	...	...	...	...	...	9	...
Ulverston	85	1	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warrington	86	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whiston	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Widnes	4	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wigan	43	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dr. Bywater	...	...	...	123	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Dr. Holmes	...	...	...	51	10	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1994	15	97	704	69	19	52	1	1	2	...	...	31	...	1	9	22	...

MINOR AILMENTS.

These include such defects as running ears, external eye disease, skin diseases, etc., and treatment for them is available for approximately 90,000 children. The number of individual children who received treatment under the Committee's scheme during the year was 11,543.

TONSILS AND ADENOIDS.

Arrangements are now in force with the following Hospitals and Clinics for the operative treatment of Tonsils and Adenoids :—Ancoats Hospital, Manchester ; Ashton-under-Lyne Infirmary ; Blackburn Royal Infirmary ; Bolton Infirmary ; Burnley Victoria Hospital ; Bury Infirmary ; Davyhulme Park Hospital ; Fleetwood Hospital ; Hartley Hospital, Colne ; Lancaster Royal Infirmary ; Leigh Borough Clinic ; Myrtle Street Hospital, Liverpool ; Oldham Royal Infirmary ; Ormskirk Cottage Hospital ; Peasley Cross Hospital, St. Helens ; Preston Royal Infirmary ; Ramsbottom Cottage Hospital ; Southport Infirmary ; Stretford Clinic ; Ulverston Cottage Hospital ; Warrington Infirmary ; Widnes Accident Hospital ; Wigan Royal Infirmary.

During the year the number of Elementary School children who received operative treatment for this condition was 2,157, of whom 1,994 were treated under the Committee's scheme.

TUBERCULOSIS.

The treatment of tuberculous school children is in the hands of the Tuberculosis Committee of the Lancashire County Council, and all cases for treatment are referred to the Tuberculosis Officer for the area concerned.

VISION.

The treatment of defects of vision is undertaken either in the Eye Departments of General Hospitals or in the Eye Departments of the Committee's own Clinics. In the former case it is undertaken by the Specialist Staff of the Hospital ; in the latter case by part-time Visiting Specialists. Arrangements have been made with the following Hospitals :—Ashton-under-Lyne ; Blackburn ; Bolton ; Burnley ; Bury ; Colne ; Oldham ; Ormskirk ; Preston ; St. Helens ; Warrington ; Whiston ; Liverpool, Myrtle Street Eye and Ear ; and St. Paul's Eye ; Wigan (Tower Buildings) ; also at the following Clinics :—Ashton-under-Lync ; Darwen ; Morecambe ; Stretford.

Visiting Specialists attend the Committee's School Clinics in Ashton-in-Makerfield, Audenshaw, Carnforth, Chorley, Crompton, Dalton-in-Furness, Davyhulme, Droylsden, Earlestown, Fleetwood, Haydock, Horwich, Irlam, Kearsley, Lancaster, Leyland, Litherland, Littleborough, Orrell, Oswaldtwistle, Padiham, Prescot, Ramsbottom, Rishton, Rochdale, Royton, Tyldesley, Ulverston, Walkden, Westhoughton, Whitefield and Wigan.

The number of children for whom Specialist eye treatment is available is approximately 121,000. The number of Elementary School children who received treatment for defective vision or squint was 6,804, of whom 6,612 were dealt with under the Committee's scheme.

Arrangements have also been made with certain firms of opticians, in connection with each Ophthalmic Clinic or Hospital, to supply spectacles at a fixed low charge. In necessitous cases the charge is reduced or remitted altogether. The number of children who either purchased glasses or received free spectacles under this scheme was 4,076.

In one area a local charity has arranged for the treatment of visual defect in Elementary School children, and provides spectacles free of charge to every child requiring them.

DENTAL DEFECTS.

The dental staff now consists of sixteen full-time and one part-time dental surgeons ; each assisted by a nurse or dental attendant. Dental Clinics have been established in Ashton-in-Makerfield, Atherton, Audenshaw, Carnforth, Chorley, Crompton, Dalton-in-Furness, Davyhulme, Droylsden, Earlestown, Fleetwood, Great Crosby, Haydock, Horwich, Irlam, Kearsley, Leyland, Litherland, Littleborough, Milnrow, Ormskirk, Orrell, Oswaldtwistle, Padiham, Prescot, Ramsbottom, Rishton, Royton, Tyldesley, Ulverston, Walkden, Westhoughton, Whitefield, and, Whitworth.

These Clinics serve schools with an average attendance of approximately 76,000 children. The number of Elementary School children who received treatment during the year was 28,491.

Apart from routine work, the dentists treat the following classes :—

(*a*) Expectant and Nursing Mothers, on the recommendation of the Medical Officers ;

(*b*) Children under school age, similarly ;

(*c*) Casuals.

Casuals are of three classes :—

(*a*) Urgent cases, *e.g.*, toothache, dental abscess ;

(*b*) Cases where the mouth has to be put into a clean condition previous to operation for tonsils and adenoids ;

(*c*) Cases in which the Medical Officer requests that dental treatment should be given for some other medical reason.

During the year 61,869 children were inspected by dentists : of these 45,623, or 73·7 per cent., were found to require treatment, and of those needing treatment 62·4 per cent. actually obtained it, as against the percentages of 78·2 per cent. and 68·8 per cent. respectively for the previous year.

	Total Inspections.	Percentage needing Treatment.	Percentage actually treated of those in previous Column.
1925	10,458	81·3	75·8
1926	18,676	80·7	77·3
1927	25,434	78·7	78·8
1928	34,037	74·6	67·2
1929	40,053	78·5	64·1
1930	46,550	77·0	66·1
1931	49,025	78·2	68·8
1932	61,869	73·7	62·4

In most of the areas for which dental inspection is available all age groups are now undergoing routine examination, rather more than half the elementary school population being covered. The table above shows the number of inspections, the percentages of those needing treatment and the percentages of the latter who actually obtained treatment during the last eight years. As each year has seen the influx of a new group, namely, the group aged 5 and 6 years, it is obvious that the condition of this group with regard to its dental state will influence the percentage of children needing treatment, diminishing the percentage if the teeth of the new group are in good order and increasing it if the teeth are in a worse condition than those of other entrants of previous years, other things being equal. The above figures include the special cases numbering 4,000—5,000 each year, and, if these are excluded, having been in most cases urgently recommended for treatment which has been carried out immediately, the corresponding percentages relating to the routine inspections can be calculated. The figures thus obtained show, in the first place, that there is little variation in the percentages of children undergoing routine examination and requiring treatment from year to year ; they are all in the neighbourhood of 70—75 per cent. Whether due to imperfect tooth formation or subsequent destruction of enamel, or a combination of both, the same causes appear to be still at work, and the results in figures show little, if any, alteration by the introduction of the fresh groups in each year.

In the second place, the consent to treatment in the routine groups is disappointing. These consents have been given in the last few years in 58—65 per cent. of routine inspections recommended for treatment. The withholding of consent increases the likelihood of caries in the other teeth and the progress of caries in the teeth already affected. When a septic condition has been set up it is too late to save the teeth, and delayed action is a detriment to the child's health and a source of interference with the normal working of the Dental Scheme.

ARTIFICIAL LIGHT TREATMENT.

Clinics have been established at Ashton-under-Lyne, Atherton, Chorley, Horwich, and Westhoughton for the treatment by artificial light of certain children in sub-normal health, and during the year 195 children received this form of treatment, making 4,630 attendances.

Ashton-under-Lyne Artificial Light Clinic.

DR. G. V. ASHCROFT summarises in the following table the results of treatment of 36 cases at the above Clinic :—

SUMMARY OF CASES TREATED AT THE ASHTON-UNDER-LYNE ARTIFICIAL LIGHT CLINIC DURING 1932.

Case.	Age. Years.	Sex.	Diagnosis.	Type of Lamp.	Body Surface Exposed.	Total Period of Treatment.	Average Dose per Treatment.	Number of Doses.	Total Dosage.	Other Treatment at same time.	OBSERVATIONS.	Weight.
F.A.	8	M.	Post-pneumonic debility ...	Mercury Vapour	Complete	4 Months	18 Mins.	19	334 Mins.	None	No improvement. Bronchitis. Treatment discontinued	Unchanged.
J.A.	3	M.	Malnutrition	,,	,,	7 ,,	20 ,,	49	930 ,,	,,	No improvement during treatment. Has progressed well since ...	Gained 4½ lbs.
E.B.	11	M.	Nervous debility	,,	,,	4 ,,	18 ,,	22	380 ,,	,,	Improved. Appetite better. Slept better ...	,, 1 lb.
C.B.	10	M.	Malnutrition. Double Otorrhœa	,,	,,	7 ,,	14 ,,	45	596 ,,	Aural	General condition improved. Otorrhœa unchanged ...	,, 3½ lbs.
F.B.	2	F.	Rickets	,,	,,	1 ,,	7 ,,	3	20 ,,	Cod Liver Oil	Failed to continue treatment	Unchanged.
J.B.	9	M.	Mediastinitis	,,	,,	2 ,,	18 ,,	17	310 ,,	None	No improvement. Bronchitis. Treatment discontinued ...	Gained 1½ lbs.
G.C.	8	M.	Post-pneumonic debility ...	,,	,,	4 ,,	20 ,,	32	630 ,,	,,	No improvement. Bronchitis. Treatment discontinued ...	,, 2½ lbs.
L.C.	11	F.	Fibrosis of lung. Chilblains	,,	,,	5 ,,	18 ,,	36	690 ,,	,,	Much improved. Chilblains cured	,, 9 lbs.
D.C.	10	F.	Malnutrition	,,	,,	6 ,,	20 ,,	34	650 ,,	,,	Improved. Appetite better	,, 3 lbs.
M.C.	2	F.	Mediastinitis	,,	,,	8 ,,	18 ,,	44	832 ,,	,,	Much improved. Occasional cough	,, 4 lbs.
E.C.	11	F.	Cervical adenitis	,,	,,	7 ,,	20 ,,	45	860 ,,	,,	Glands much improved, still palpable	,, 7 lbs.
S.D.	3	M.	Rickets	,,	,,	3 ,,	18 ,,	18	328 ,,	Cod Liver Oil	Improved	Unchanged.
K.D.	8	M.	Chorea	,,	,,	3 ,,	16 ,,	15	248 ,,	None	Chorea improved. Myocarditis with fainting supervened. Discontinued	Gained 3 lbs.
M.D.	3	F.	Post-pneumonic debility ...	,,	,,	7 ,,	18 ,,	38	696 ,,	,,	Improved. Attack of bronchitis during treatment ...	,, 2 lbs.
J.D.	10	M.	Post-rheumatic debility ...	,,	,,	3 ,,	18 ,,	26	480 ,,	,,	General condition improved. Still has rheumatism ...	,, 2 lbs.
W.F.	4	M.	Rickets	,,	,,	3 ,,	17 ,,	21	340 ,,	Cod Liver Oil	Little improvement. Admitted to Biddulph Hospital	Unchanged.
W.G.	11	M.	Post-choreic debility ...	,,	,,	3 ,,	17 ,,	17	296 ,,	None	General condition improved	Gained 1 lb.
J.G.	13	M.	Chorea	,,	,,	4 ,,	19 ,,	33	630 ,,	,,	General appearance improved. Some choreic movements present at end of term	,, 4 lbs.
F.G.	9 Mths.	M.	Rickets	,,	,,	1 Week	7 ,,	2	14 ,,	Cod Liver Oil	Failed to continue treatment	Unchanged

Case.	Age. Years.	Sex.	Diagnosis.	Type of Lamp.	Body Surface Exposed.	Total Period of Treatment.	Average Dose per Treatment.	Number of Doses.	Total Dosage.	Other Treatment at same time.	OBSERVATIONS.	Weight.
C.H.	11	F.	Post-pneumonic debility ...	Mercury Vapour.	Complete.	4 Months	9 Mins.	32	316 Mins.	None	Much improved	Gained 3 lbs.
E.H.	7	M.	Anæmia. Fibrosis of lung...	,,	,,	4 ,,	3 ,,	32	96 ,,	,,	General health improved	,, 1½ lbs.
J.H.	6	M.	Post-pneumonic debility ...	,,	,,	2 ,,	13 ,,	18	234 ,,	,,	General condition improved	,, ½ lb.
G.H.	6	M.	Debility	,,	,,	2 ,,	6 ,,	14	84 ,,	T's & A's Opn.	No improvement Failed to continue treatment	,, 1 lb.
G.L.	5	M.	Cervical adenitis	,,	,,	4 ,,	18 ,,	26	510 ,,	None	Much improved	,, 2 lbs.
E.L.	7	F.	Post-diphtheritic debility. Indolent sores of skin	,,	,,	7 ,,	11 ,,	33	374 ,,	T's & A's Opn.	Much improved. Skin cured	,, 1 lb.
M.L.	11	F.	Post-rheumatic debility ...	,,	,,	7 ,,	19 ,,	41	790 ,,	None	Much improved. No recurrence of rheumatism ...	,, 1 lb.
N.M.	3	F.	Rickets	,,	,,	2 ,,	15 ,,	9	136 ,,	Cod Liver Oil	Some improvement. Failed to continue treatment ...	Unchanged.
J.P.	3	M.	Post-diphtheritic debility ...	,,	,,	1 ,,	9 ,,	4	36 ,,	None	Failed to continue treatment	,,
W.P.	11	F.	Malnutrition	,,	,,	8 ,,	18 ,,	55	1052 ,,	,,	No improvement. Remained under weight ...	Gained 1½ lbs.
J.S.	12	M.	Post-diphtheritic debility ...	,,	,,	5 ,,	19 ,,	33	630 ,,	,,	General condition improved	,, 5 lbs.
C.T.	10	M.	Nervous debility. Exfoliative dermatitis	,,	,,	4 ,,	19 ,,	33	630 ,,	,,	General condition improved. Dermatitis unchanged ...	,, 1 lb.
J.S.	4	M.	Cervical adenitis. Onychia	,,	,,	3 ,,	18 ,,	21	390 ,,	,,	Glands improved, still palpable. Onychia cured ...	,, 1½ lbs.
M.W.	7	F.	Mediastinitis. Post-choreic debility	,,	,,	3 ,,	17 ,,	10	170 ,,	,,	Slight improvement. Bronchitis. Failed to continue treatment	,, ½ lb.
H.W.	8	M.	Nervous debility	,,	,,	7 ,,	19 ,,	47	910 ,,	,,	Improved. Child more active	,, 1 lb.
G.W.	3	M.	Rickets	,,	,,	2 ,,	—	9	—	Cod Liver Oil	Admitted Biddulph Hospital. Treatment discontinued	
G.Y.	3	M.	Rickets	,,	,,	1 Week	10 ,,	3	30 ,,	,,	Failed to continue treatment	Unchanged.

During the year 1932 the number of children from this Area referred for treatment at the Ashton-under-Lyne Artificial Light Clinic was thirty-six. An account of the cases is given in the accompanying table which shows the diseases treated and observations as to the results of treatment.

A mercury vapour lamp was used, the average period of treatment being four months (maximum eight months, minimum one week), the average number of doses being twenty-six (maximum 55, minimum 2), and the strength of the doses being usually twenty minutes, after attaining the maximum, at a distance of thirty inches. Of the thirty-six cases :—

4 were treated for Malnutrition.
5 were treated for Post-pneumonic debility.
7 were treated for Rickets.
3 were treated for Nervous debility.
3 were treated for Mediastinitis.
3 were treated for Cervical adenitis.
3 were treated for Post-diphtheritic debility.
2 were treated for Chorea.
2 were treated for Post-rheumatic debility.
1 was treated for Post-choreic debility.
1 was treated for Debility.
1 was treated for Chilblains.
1 was treated for Anæmia.

Of the four malnutrition cases, one showed no improvement after eight months' treatment; one showed no improvement during treatment, but has been better since. Two were improved, one of these had otorrhœa which remained unchanged. In only one was the gain in weight more than would be expected from normal growth during the period of treatment.

Of the five Post-pneumonic cases, three had bronchitis during treatment; in two of these there were repeated attacks and treatment was discontinued. Two were much improved.

The three cases of Nervous debility were all improved.

Of the seven cases of Rickets, five did not complete a sufficient period of treatment, two were improved.

Of the three cases of Mediastinitis, two developed bronchitis and treatment was not continued. One was much improved.

The three cases of Cervical adenitis were all much improved.

Of the two cases of Chorea, one was improved, but myocarditis supervened, the other still showed choreic movements after four months' treatment.

The one case of Post-choreic debility was improved.

The two cases of Post-rheumatic debility were improved, as also were the two Post-diphtheritic cases who completed treatment.

Most of the cases had no other treatment during their course of artificial light, with the exception of cases of rickets who were given Cod Liver Oil, and two cases of debility who had tonsils and adenoids removed.

Conclusions.

While it is not possible to draw definite conclusions as to the value of Artificial Light treatment from the study of a small number of cases, yet the results of treatment in this particular series appear to show that it is of value in :—

(1) The treatment of cervical adenitis and chronic skin affections, as indolent sores and onychia, and in chilblains.

(2) The treatment of rickets, where sufficient dosage is given.

(3) Certain cases of debility, particularly in the nervous type of child and following acute illness, such as diphtheria.

That its value is doubtful in :—

(1) Post-pneumonic debility and in mediastinitis where there seems to be a tendency to attacks of bronchitis during treatment.

(2) Cases of chorea and rheumatism. The infecting agent appears to remain active in spite of treatment.

(3) Cases of malnutrition, particularly when considered from the point of view of gain in weight, although some of the cases appear to be brighter and more active and are stated to have a better appetite.

Artificial Light is a treatment of value in selected cases, but in certain types of conditions of lowered vitality other methods of treatment would probably yield as good if not better results.

Dr. J. H. Porter also referred three cases to the Ashton-under-Lyne Artificial Light Clinic with the following result :—

	Group 1.	*Group 3.*
(i.) No. of cases treated	One.	Two.
(ii.) Type of lamp used	Mercury Vapour.	Mercury Vapour.
(*a*) Period of treatment	Still under treatment.	One still under treatment. One discharged after 29 weeks.
(*b*) No. of doses		Forty-three.
(*c*) Strength of doses		10 minutes.
(iii.) Statement as to other form of treatment adopted at the same time	None.	None.
(iv.) Statement of progress as regards general health	Medical Officer and parent state general health much improved.	Medical Officer and parent state general health much improved.
(v.) Statement of progress as regards special symptoms	No special symptoms.	No special symptoms.
(vi.) Note of any unfavourable symptoms.	None.	None.
(vii.) General conclusion as to effect of treatment	Treatment decidedly beneficial.	Treatment decidedly beneficial.

Atherton and Westhoughton Artificial Sunlight Clinics.

Dr. Leigh reports as follows :—

(i.) (*a*) Atherton and Tyldesley Children of School Age.

Total number treated	28 21 Atherton, 7 Tyldesley

Summary :—

Rickets (active)	3
Chronic Eczema	1
Anaemia and Debility	3
Catarrhal	3
Malnutrition	4
Alopecia	1
Adenitis (cervical)	12
Furunculosis	1

(*b*) Westhoughton children of school age. Total number treated ... 11

Summary :—

Malnutrition	5
Furunculosis	1
Adenitis (cervical)	3
Rickets	2

(ii.) Type of Lamp used :—Quartz Mercury Vapour.

(*a*) Average period of treatment	18 weeks.
Maximum period of treatment	9 months.
Minimum period of treatment	7 weeks.
(*b*) Average number of doses	28
Maximum number of doses	68
Minimum number of doses	9

(*c*) Strength of doses :—Varies from 2 to 15 minutes at distance of three feet.

(iii.) Except three cases in receipt of Cod Liver Oil or Haliverol, treatment was by Artificial Light alone.

(iv.) In almost all cases, benefit seems to have been derived from the treatment. Of the 15 cases of Adenitis, all except three made good recovery. In the latter cases, abscess resulted and this called for surgical treatment.

(v.) In no case have unfavourable symptoms been observed.

Atherton children of pre-school age :—

Total number treated	62
Average number of doses per case	30

Summary :—

Rickets	27
Catarrhal conditions	14
General debility...	18
Adenitis	3

The year's experience confirms one's previous feeling that the great value of this treatment is associated with Rickets and allied conditions.

In several instances, the response has been almost wonderful.

The physical improvement is obvious and parents state there has been a definite improvement as regards temperament.

Chorley Artificial Light Clinic.

Dr. G. G. Johnstone reports as follows on the eight cases referred by him for treatment at the above Clinic :—

Case 1.—Boy born 18/8/24 :

Cervical Adenitis. Discharged after 18 months' almost continuous treatment. Fairly good health. Small glands still in the neck.

Case 2.—Girl born 21/7/24.

Tonsillitis and Debility. Under treatment she gained in weight slightly, her general condition improved but she still remained relatively thin. She was discharged after 7 months' treatment.

Case 3.—Boy born 13/5/19 :

Chronic Bronchitis. Had treatment for 1 month. Parent discontinued attendance because she said child caught cold after each visit.

Case 4.—Boy born 15/6/26 :

Frequent colds and losing weight. Two months' treatment during May, June and July. Gained weight and health much improved.

Case 5.—Boy born 3/9/21 :

Chronic Bronchitis. As a result of treatment much improved. Continues to attend.

Case 6.—Boy born 10/1/22 :

Chronic Bronchitis. Improved during treatment but discontinued owing to his admission to Ethel Hedley Hospital for treatment for Talipes Equino-Varus.

Case 7.—Girl born 27/1/22 :

Post-Rheumatic Debility. Attended Clinic on 6 occasions at the end of which time she was much improved and discontinued treatment on account of her improved health.

Case 8.—Boy born 10/11/22 :

Glands in Neck. Had tonsils removed two years previously. Operation unsatisfactory. Debility and losing weight. Attended the Clinic on 18 occasions but after each visit always felt tired and continued to lose weight, so discontinued attendance. After second operation for removal of tonsils and adenoids much improved and is now doing well.

Dr. G. G. Wray sends the following observations on the sixteen cases he referred to the Chorley Clinic :—

Case No. 1.—Rickets and Broncho-Pneumonia following Measles. Child has not completed his course of treatment but shows some improvement.

Case No. 2.—Septic Knee and Groin. Child has not completed course of treatment but shows some improvement.

Case No. 3.—Bronchitis and Otitis following Measles. This case is still attending but is very much improved.

Case No. 4.—Sub-acute Bronchitis. Very good result. Chest now practically clear.

Case No. 5.—Bronchiectasis. Improvement in the chest. Having another course during 1933.

Case No. 6.—Bronchitis—Post Pneumonia. Chest quite clear.

Case No. 7.—Bronchitis—Post Whooping Cough. Chest quite clear.

Case No. 8.—Bronchitis—Post Whooping Cough. Chest quite clear.

Case No. 9.—Post Pneumonia. Not yet completed treatment but improved.

Case No. 10.—Asthma. Very marked improvement of condition in chest. has not had any Asthma for several months.

Case No. 11.—Rickets and Broncho-Pneumonia. Child has not attended since, results unknown.

Case No. 12.—Bronchitis. Chest quite clear.

Case No. 13.—Bronchitis. Chest much improved. Not yet completed course.

Case No. 14.—Post Whooping Cough and Pneumonia. Chest completely cleared.

Case No. 15.—Post Whooping Cough. Chest completely cleared.

Case No. 16.—Bronchitis. Chest quite cleared.

Horwich Artificial Light Clinic.

During the year 1932 Dr. J. R. Jagger referred thirty-one children of school age for treatment at the Horwich Ultra Violet Ray Clinic. The types of cases treated and the results obtained are given in the following table :—

SUMMARY OF CASES TREATED AT THE HORWICH ARTIFICIAL LIGHT CLINIC DURING 1932.

Case.	Sex.	Ag	Complexion.		Disease or Defect.	Duration, Dosage and Type of Irradiation.					Other Treatments.	Observations.	Weight.
								Dosage.					
			Hair.	Eyes.		Mercury Lamp.	Carbon Arc.	Body Surface.	Mins.	Frequency.			
A.J.	F.	11	Medium brown	Blue	Anæmia ĉ Gastritis	+	...	Back & front	3	Twice weekly for 23 weeks	Iron	Membranes better colour. Child happier; takes food better	Gained 4 lbs.
A.J.	M.	12	Ginger	Blue	Post Pneumonia and Empyema ...	...	+	Back & front	5	Twice weekly for 18 weeks	Dietetic and Breathing Exercises	Has made slow, but satisfactory progress ...	Gained 3 lbs.
A.M.	F.	10	Medium brown	Brown	Bronchial Asthma	+	...	Back & front	2	Twice weekly for 27 weeks	...	General condition improved. Asthmatic attacks less frequent and less severe ...	Gained 10 lbs. 1 oz.
B.S.	F.	9	Brown	Blue	Anæmia	...	+	Back & front	5	Twice weekly for 43 weeks	Cod Liver Oil and Radiostol	Colour of Mucous Membranes improved. Child more active ...	Gained 3¾ lbs.
B.J.	F.	11	Light	Blue	Anæmia. Delicacy	...	+	Back & front	5	Twice weekly for 22 weeks	Iron and Calcium	Appetite and general health improved. Muscle tone increased ...	Gained 5 lbs.
C.F.	F.	10	Dark	Brown	Enlarged Cervical Glands. Gastro Enteritis	...	+	Back & front	5	Twice weekly for 15 weeks	Dietetic ...	Glands reduced	Gained 3 lbs.
C.J.	M.	7	Fair	Grey	Enlarged Cervical Glands	+	...	Back & front and local	2	Twice weekly for 14 weeks	...	Cured	Gained 4 lbs.
C.V.	M.	13	Fair	Blue	Lupus...	+	...	Local	3	Twice weekly for 17 weeks	...	Cured	Gained 2 lbs.
C.F.	M.	7	Fair	Grey	Debility after Measles	...	+	Back & front	5	Twice weekly for 3 weeks	Cod Liver Oil	Muscle tone and general health improved ...	Gained 10 ozs.
F.E.	M.	5	Dark brown	Brown	Bronchial Asthma	...	+	Back & front	5	Twice weekly for 40 weeks	Cod Liver Oil Ephetonin	Asthmatic attacks less severe and less frequent. General health and activity increased	Gained 6 lbs.
G.B.	M.	6	Fair	Blue	Rickets	...	+	Back & front	5	Twice weekly for 21 weeks	Cod Liver Oil	Cured	Gained 5 lbs.
G.A.	M.	7	Fair	Grey	Debility after Measles	...	+	Back & front	5	Twice weekly for 3 weeks	Cod Liver Oil and Dietetic	Muscle tone improved	Gained 5 ozs.
H.M.	F.	12	Medium brown	Grey	Anæmia and Gastro Enteritis ...	...	+	Back & front	5	Twice weekly for 32 weeks	Cod Liver Oil and Calcium	Muscle tone improved. Mucous Membranes better colour, and appetite normal	Gained 3 lbs.
H.J.	M.	5	Fair	Grey	Post Scarlatinal Debility	...	+	Back & front	5	Twice weekly for 4 weeks	Cod Liver Oil	Muscle tone improved and child much happier ...	Gained 1 lb.
H.C.	M.	6	Brown	Brown	Cervical Adenitis	...	+	Back & front	5	Twice weekly for 7 weeks	Cod Liver Oil	Cured	Gained 2 lbs.

Case.	Sex.	Age	Complexion.		Disease or Defect.	Duration, Dosage and Type of Irradiation.					Other Treatments.	Observations.	Weight.
			Hair.	Eyes.		Mercury Lamp.	Carbon Arc.	Dosage.					
								Body Surface.	Mins.	Frequency.			
H.H.	M.	7	Red	Grey	Tuberculous Glands Abdomen	...	+	Back & front	5	Twice weekly for 2 weeks	Cod Liver Oil	Improved	Gained 1 lb.
H.M.	F.	6	Medium brown	Grey	Debility after Whooping Cough	...	+	Back & front	5	One treatment only	...	Induced bronchitis. Treatment discontinued	...
J.D.	F.	7	Fair	Grey	Anæmia	...	+	Back & front	5	Twice weekly for 2 weeks	Cod Liver Oil	Stopped treatment of own accord. Little change	6 ozs.
K.N.	F.	7	Light	Blue	Ringworm Scalp	+	...	Local	3	Twice weekly for 9 weeks	...	Cured	Lost 10 ozs.
K.E.	F.	7	Auburn	Grey	Cervical Adenitis	+	...	Local	3	Twice weekly for 16 weeks	...	Glands less; much improved	Gained 2 lbs. 8 ozs.
Mc.R.	M.	7	Fair	Grey	Bronchitis	...	+	Back & front	5	Once weekly for 3 weeks	Cod Liver Oil	Chest clear	Gained 1 lb.
N.J.	M.	5	Fair	Blue	Anæmia (Post Morbilli)	...	+	Back & front	5	Twice weekly for 10 weeks	Cod Liver Oil	Mucous membranes and muscle tone improved	Gained 1 lb.
P.A.	F.	9	Fair	Blue	Tubercular Cervical Adenitis	+	...	Local	3	Twice weekly for 4 weeks	Cod Liver Oil	Glands quiescent	Gained 1 lb.
S.H.	M.	6	Dark	Brown	Bronchitis	...	+	Back & front	5	Twice weekly for 12 weeks	Cod Liver Oil	Chest condition improved	Gained 2 lbs.
S.M.	F.	9	Fair	Blue	Cervical Adenitis	+	...	Local	3	Twice weekly for 19 weeks	Cod Liver Oil	Cured	Gained 3 lbs.
T.R.	M.	6	Fair	Blue	Anæmia	...	+	Back & front	5	Twice weekly for 2 weeks	Nil	No change	Lost 1 oz.
T.J.	M.	12	Fair	Blue	Lupus	+	...	Local	3	Twice weekly for 10 weeks	Nil	Cured	Gained 5 lbs.
W.F.	M.	8	Fair	Grey	Anæmia and Bronchitis	...	+	Back & front	5	Twice weekly for 14 weeks	Cod Liver Oil	Anæmia and bronchitis cured	Gained 6 lbs.
W.J.	M.	6	Fair	Blue	Post Influenzal Debility	...	+	Back & front	5	Twice weekly for 31 weeks	Cod Liver Oil	Muscle tone and appetite increased	Gained 7 lbs.
W.H.	F.	5	Fair	Grey	Anæmia (Post Whooping Cough)	...	+	Back & front	5	Twice weekly for 11 weeks	Cod Liver Oil	Anæmia cured. General health and activity improved	Gained 1 lb.
W.E.	F.	13	Dark	Brown	Chorea (Post Operative Tonsils)	...	+	Back & front	5	Twice weekly for 10 weeks	Salicylates	Cured	Gained 6 lbs.

Analysis of these cases shows that the largest group (9) consists of cases of Anaemia, and all these subjects have shown definite improvement although treatment has covered a comparatively long period.

The next group (6) consists of those cases suffering from enlarged cervical glands (not due to tonsils) and without exception these have been cured by the U.V.R. medication.

The next class of case (5) includes those debilitated subjects who have recently suffered from some infectious disease, such as measles, scarlet fever or influenza, and who have, in a way, hung fire in their return to normal health. These cases have made rapid improvement and the time spent in treatment has, therefore, been short.

Children suffering from chronic bronchitis (4) show little change in the condition of the chest, though there may be some little improvement in general health.

The two lupus cases were both cured.

One empyema case and one suffering from chorea both showed definite and sustained improvement, while the one case of rickets and the one case of ringworm were cured.

ACCIDENTS TO SCHOOL CHILDREN.

During the year 385 accidents to children in school were reported. This compares with 331, 339, 311, 364 and 258 for the previous five years.

The following first-aid materials are provided on the Schedule of School Supplies :—

Gauze Bandages, 1 in. in lengths of 6 yards.
Gauze Bandages, 2 in. in lengths of 6 yards.
Boric Lint in rolls of 2 oz.
Cotton Wool in cartons of 4 oz.
Adhesive Plaster on ½-in. spools, 2½ yards long.

CRIPPLING DEFECTS.

The arrangements for dealing with crippled children were fully described in the Annual Report for 1927. The following is a list of Autonomous Authorities who have joined the Scheme :—

County Boroughs—
- Blackpool
- Burnley
- Bury
- Oldham (beds only).
- Preston
- Wigan

Municipal Boroughs—
- Accrington
- Ashton-under-Lyne
- Bacup
- Colne
- Darwen
- Eccles
- Haslingden
- Heywood
- Lancaster
- Leigh
- Lytham St. Annes
- Morecambe
- Nelson
- Rawtenstall

Urban District Councils—
- Chadderton
- *Denton (M. & C. W.)
- Farnworth
- *Golborne (M. & C. W.)
- Hindley
- *Horwich (M. & C. W.)
- Ince-in-Makerfield
- *Newton-in-Makerfield (M. & C. W.)
- Radcliffe
- *Royton (M. & C. W.)
- Stretford (beds only).
- *Tyldesley (M. & C. W.)
- Waterloo-with-Seaforth
- *Westhoughton (M. & C. W.)

Oldham and Stretford have their own After-Care Scheme, but send cases to the Biddulph Orthopædic Hospital.

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*Autonomous Authorities for Maternity and Child Welfare purposes.—The Lancashire Education Committee are responsible for the school children in these districts.

The following table shows the number of children treated during 1932 :—

	Ancoats Hospital.	Biddulph Hospital.	Ethel Hedley Hospital.	Rochdale Crippled Children's Home.	Myrtle Street Hospital.	Heswall Country Hospital.
In-patients, 1st Jan. 1932	1	85	13	14	2	14
Admitted during the year	3	202	34	24	43	30
Discharged during the year	2	199	31	26	41	24
Remaining on 31st Dec., 1932	2	88	16	12	4	20

After-Care Centres.

The following is a summary of the work done during the year in the After-Care Centres :—

No. of individual children who attended	3,444
Total number of attendances made	15,745
No. of children referred to Consultant Orthopædic Surgeon at Hospitals (Ancoats or Myrtle Street)	279
No. of children recommended for operative treatment by Orthopædic Surgeons at Centre or Hospital	335
No. of Plasters made at Centres	268
No. of Surgical Appliances, *e.g.*, boots, irons, etc., supplied through Centres	1,141
No. of children given remedial exercises	1,085
No. of children for whom treatment has been refused by parents or guardians	105

The following table shows the defects from which the children seen in the After-Care Centres were suffering :—

Paralysis—	
(*a*) Infantile—Facial	3
Upper Limb	38
Lower Limb	266
Upper and Lower Limb	12
(*b*) Spastic—Monoplegia	9
Diplegia	18
Paraplegia	101
Hemiplegia	135
Tetraplegia	1
(*c*) Birth Palsy	76
Deformities, Congenital—	
Hydrocephalus	7
Cleft Palate	2
Scoliosis	26
Sprengel's Shoulder	10
Rudimentary and Malformed Limbs	25
Talipes Equino-Varus	132
Talipes Equino-Valgus	24
Pes Calcaneus	53
Torticollis	96
Torticollis, Spasmodic	12
Spina Bifida	28
Spina Bifida with Club Foot	10
Achondroplasia	4
Metatarsus Varus	41
Absence of Bones	4
Club Hand	2
Dislocation of Hip	67
Subluxation of Hip	7
Contractions	14
Syndactylism	3
Wedged Vertebrae	5
Adduction Fifth Toe	12
Supernumerary Digits	2
Other Deformities	24
Deformities, Traumatic—	
Fractures of Upper and Lower Limbs	94
Subluxations	2
Dislocations	2
Displaced Epiphysis	5
Contusions	7
Tendons	7
Amputations	4
Sprains	18
Intra Uterine Amputation of Hand	5
Intra Uterine Amputation of Hand and Foot	4
Coxa Vara	10
Nerve Injuries	10
Other Deformities	22
Deformities, Other—	
Pronated Feet	29
Pes Cavus	42
Pes Varus	9
Pes Planus	205
Genu Recurvatum	2
Claw Feet	14
Hallux Valgus	17
Scoliosis	175
Kyphosis	106
Lordosis	24
Synostosis Radius and Ulna	1
Pseudo Coxalgia	34
Hammer Toes	15
Birth Fractures	2
Miscellaneous	75

Rickets—	
Genu Varum	341
Genu Valgum	402
Genu Valgum and Coxa Vara	1
Genu Varum and Coxa Vara	6
Generalised	37
Acute	21
Renal	4
Inflammations—	
Arthritis	16
Arthritis, Suppurative	11
Arthritis, Infective	21
Periostitis and Osteitis	5
Synovitis	32
Bursitis	13
Epiphysitis	6
Pyæmia	3
Schlatter's Disease	6
Osteomyelitis	18
Dactylitis	7
Other	9
Tuberculosis—	
Active—Knee	13
Hip	6
Elbow	2
Os Calcis	2
Spine	4
Dactylitis	2
Ankle	6
Iiium	2
Old—Knee	12
Spine	19
Hip	16
Elbow	2
Ankle	3
Shoulder	1
Others	2
Tumours—	
Exostosis—Multiple	8
Lower Limb	11
Nævus	1
Ganglion	5
Fibroma	2
Lipoma	4
Cyst	13
Nervous Diseases—	
Mental Deficiency	16
Encephalitis Lethargica	2
Polio Encephalitis	5
Other Medical Neuroses	7
Progressive Muscular Atrophy	2
Miscellaneous—	
Köhler's Disease	1
General Muscular Hypotonia	5
Hemihypertrophy	4
Empyema	2
Unclassified	96
	3444

The following table shows concisely the work done during the year in the Hospitals with which the Committee has arrangements :—

Defect.	No. of Cases treated.	Cured.	Improved.	Improving.	Refused Treatment.	Stationary.	Died.
Infantile Paralysis	36	2	28	5	...	1	..
Spastic Paralysis	18	...	15	2	...	1	...
Birth Palsy	5	1	3	...	...	1	...
Deformities—							
Congenital	73	20	41	7	...	5	..
Traumatic	4	2	1	1	...	...	...
Other...	38	4	29	3	...	1	1
Rickets	75	38	31	5	...	1	...
Inflammations—							
Arthritis	12	...	6	3	...	1	2
Osteomyelitis	5	1	3	1	...	...	...
Abscess	2	2	...	...	...	...	...
Bursa	1	1	...	...	...	...	...
Synovitis	1	1	...	...	...	...	...
Tumours—							
Nævus	1	...	1	...	...	...	...
Exostosis	1	1	...	...	...	..	...
T.B. Hip	2	...	1	...	...	1	...
T.B. Knee	1	...	...	...	...	1	...
Old T.B. Hip	5	...	2	...	...	3	...
Totals	280	73	161	27	...	16	3

The following table shows the number and character of the operations performed at the Committee's Hospital at Biddulph during the year ended 31st December, 1932 :—

		No. of Operations.	
Infantile Paralysis	Stabilisation of Foot	23	
	Wrench	4	
	Arthrodesis of Shoulder	2	
	Tendon Transplantation	4	
		—	33
Spastic Paralysis	Obturator Neurotomy	3	
	Elongation Tendo Achillis	4	
	Pes Cavus	1	
		—	8
Birth Palsy	Division of Internal Rotators		4
Congenital Torticollis	Open Correction		22
Congenital Dislocation of Hip	Manipulation	7	
	Reduction	7	
	Trans-trochanteric Osteotomy	2	
		—	16
Rickets	Osteotomies	26	
	Osteoclasis	8	
		—	34
Congenital Claw Feet	Open Correction		11
Congenital Club Foot	Stabilisation	15	
	Wrench	7	
	Tenotomy of Tendo Achillis	2	
		—	24
Tubercular Arthritis	Trans-trochanteric Osteotomy		2
Infective Arthritis	Arthrodesis		6
Osteomyelitis	Sequestrectomy		3
Miscellaneous	Plastic Operations	2	
	Plastic Operations with Skin Graft	6	
	Hammer Toe	2	
	Hallux Valgus	1	
	Removal of Exostoses	2	
	Removal of Macrodactylism	1	
	Open Reduction—Dislocated Humerus	1	
	Manipulation Congenital Deformities	2	
		—	17
			180

During the year 201 children were admitted to Biddulph Hospital and the following table gives particulars of the defects from which these children were suffering :—

Bone Diseases	Rickets	38	
	Achondroplasia	1	
	Osteomyelitis	3	
	Neoplasm	1	
		—	43
Bone Injuries	Fractures	1	
	Slipped Epiphysis	2	
		—	3
Joint Deformities	Congenital Dislocation of Hip		13

		No. of Operations.	
Joint Diseases	Tuberculosis	2	
	Infective Arthritis	10	
	Pseudo-coxalgia	3	
	Infective Synovitis	1	
		—	16
Joint Injuries	Dislocations	1	
	Subluxations	1	
		—	2
Tendon Diseases	Ganglion		1
Skin and Subcutaneous Tissue	Scar Contraction	3	
	Pre-patellar Bursa	1	
		—	4
Nervous System :—			
(1) Central	Spastic Paraplegia	3	
	Infantile Hemiplegia	3	
	Anterior Poliomyelitis	30	
(2) Peripheral	Birth Palsy	7	
		—	43
Other Deformities :—			
(1) Congenital	Torticollis	20	
	Collis Brevis	1	
	Scoliosis	7	
	Spina Bifida	2	
	Coxa Vara	1	
	Contractures	2	
	Pes Cavus	11	
	Talipes Equino-Varus	10	
	Macrodactyly	2	
		—	56
(2) Acquired	Genu Varum	2	
	Genu Valgum	5	
	Hammer Toe	2	
	Hallux Valgus	1	
	Scoliosis	1	
	Postural	3	
	Torticollis	3	
	Hydro-cephalus	2	
	Kyphosis	1	
		—	20
			201

The number of plasters applied during the course of treatment of the patients for the year was 462. The number of treatments given in the Massage Department was 5,462.

Massage only	1,016
Electrical	513
Radiant Heat	560
Exercises	3,373

Artificial sunlight was again carried out regularly during the winter months for all cases in which it was considered necessary.

During 1932 there were a few cases of Measles and German Measles.

The immunisation of staff and patients who show positive reaction to the test for susceptibility to Scarlet Fever is still continued.

During the year there were two deaths from post-operative shock following a major operation on the hip.

STATISTICS OF MEDICAL TREATMENT.

The following tables show the amount of treatment which has been given during 1932. The kind of treatment and the results are also specified.

The first set of tables gives this information about those children who were examined at the routine medical inspection immediately preceding, *i.e.*, in general, those children whose medical inspection took place in 1931.

TREATMENT OF DEFECTS.

New Cases.

Disease or Defect.	Number of Children.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	46	23	22	45	41	1	...	...	1
Ringworm—Body ...	28	11	17	28	27	1	...	...	...
Scabies	45	17	26	43	42	1	...	...	...
Impetigo	324	226	91	317	316	1	...	1	6
Other Skin Disease ...	360	146	196	342	282	47	13	3	15
Ear Disease	522	255	176	431	289	113	29	50	41
Eye Disease (external and other)	393	232	128	360	277	72	11	15	18
Dental Disease	2669	1082	513	1595	1182	402	11	786	288
Other Diseases	1362	577	542	1119	549	497	73	146	97

TREATMENT OF VISUAL DEFECT.

Number of Children.													
Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Refracted.	No information.
	Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital or otherwise.		Treatment other than by Glasses.		For whom no Treatment was considered necessary.		
					Glasses Prescrbd.	Glasses Obtained.	Glasses Prescrbd.	Glasses Obtained.	Recommended.	Received.			
2856	2088	100	69	2257	1905	1824	148	146	35	26	169	385	214

TREATMENT OF DEFECTS OF NOSE AND THROAT.

Number of Children.						
Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Untreated.	No information.
	Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
1818	919	131	1050	154	458	156

The following set of tables gives similar information about those children who were recommended to obtain treatment at any inspection prior to the last :—

TREATMENT OF DEFECTS.

Old Cases.

DISEASE OR DEFECT.	NUMBER OF CHILDREN.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	3	3	...	3	3	...	...	...	...
Ringworm—Body ...	1	1	...	1	1	...	...	...	...
Scabies	4	4	...	4	4	...	...	...	...
Impetigo	28	26	2	28	27	1	...	...	...
Other Skin Disease ..	36	18	13	31	20	7	4	2	3
Ear Disease	125	61	27	88	58	19	11	24	13
Eye Disease (external and other)	51	31	8	39	28	8	3	8	4
Dental Disease	516	172	80	252	136	116	...	187	77
Other Diseases	197	76	61	137	49	74	14	36	24

TREATMENT OF VISUAL DEFECT.

NUMBER OF CHILDREN.

Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Refracted.	No information.
	Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital or otherwise.		Treatment other than by Glasses.		For whom no Treatment was considered necessary.		
					Glasses Prescrbd.	Glasses Obtained.	Glasses Prescrbd.	Glasses Obtained.	Recommended.	Received.			
445	210	12	11	233	196	185	22	21	7	7	8	137	75

TREATMENT OF DEFECTS OF NOSE AND THROAT.

NUMBER OF CHILDREN.

Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Untreated.	No information.
	Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
639	175	32	207	35	299	98

OPEN-AIR EDUCATION.

Arrangements are in force with the County Boroughs of Burnley and Preston, the Municipal Borough of Nelson, and Urban District of Swinton and Pendlebury whereby certain children are enabled to receive education at their open-air schools.

There are no special open-air schools in the area of the Lancashire Education Committee, although the newer schools now offer increased facilities for open-air classes of which advantage is taken whenever the opportunity arises.

PHYSICAL TRAINING.

The physical training, as described in previous Reports, is under the general supervision of the County Medical Officer and his staff. During the year the Inspector of Physical Exercises visited 233 schools (243 Departments) and examined the children in physical exercises and organized games.

The teachers in certain districts are able to obtain further instruction in physical training in classes organised by the Director of Education and held at Accrington, Farnworth and Wigan. At each place the course is conducted by a recognised teacher of physical exercises, and is open to those teachers specially selected, who are ultimately to be responsible for the training in their own schools. The courses were attended by 31 men and 81 women teachers.

The following is extracted from the Report of the Director of Education :—

Organized Games.

1.—Review of Reports, 1932–33.

It is evident from the reports from Games Associations to which grants have been made by the Committee in the past year that the provision for Organised Games is as a whole satisfactory. Existing Games Associations have with few exceptions extended their scope in the past year, and have organised a more varied programme of games and sports.

The extent of the activities of these Associations reflects not only the interest and enthusiasm of the teachers and children in this section of the school curriculum, but also the practical interest which is displayed in the school games by the general public and by public bodies.

It is gratifying to note that some Associations in Rural Districts, where the difficulties due to the wide separation of the schools are considerable, are in a flourishing condition, and that there is a steady increase in the number of such Associations. The Committee's scheme for encouraging Organised Games has been of great value to the new Senior Schools which have recently been opened and has enabled them to make provision for their Organised Games almost from the date of opening.

As in former years, the success of many Associations has been enhanced by the valuable voluntary assistance and support given by members of the general public who are locally interested. The main bulk of the work, however, falls upon the teachers, and it is evident that they give their time and work unsparingly in the interests of the Games Associations.

2.—Increase in Associations.

The growth in organized games under the Committee's Scheme is shown below :—

Year.		No. of aided Associations.		No. of Schools in Associations.
1921–22	...	7	...	42
1926–27	...	27	...	209
1932–33	...	44	...	319

All existing Associations have renewed their application for a grant, and six new Associations are applying for a first grant. The figures for 1933–34 are as follows :—

Year.		No. of aided Associations.		No. of Schools in Associations.
1933–34	...	51	...	332

3.—Arrangements for 1933–34.

The amount provided in the Committee's Estimates for affording assistance to Organised Games Associations was £1,000. The following table shows the number of schools or departments which are recommended for grants :—

District No.	Name of Association.	No. of Schools
1	Leven and Crake Valley	9
	High Furness Rural Games	7
	Cartmel District Schools' Athletic	5
	North Lonsdale Schools' Athletic	16
3	Garstang and District Schools' Games	12
4	Fleetwood Elementary Schools' Games	4
	Thornton Cleveleys Elementary Schools' Games	7
6	Ribblesdale (Area No. 6) Schools' Games	5
7	South Ribble Elementary Schools' Games Federation	
	(*a*) Walton-le-Dale Schools' Sports	27
	(*b*) South Ribble Schoolgirls' Games	
	(*c*) Leyland and District Schools' Athletic	
	(*d*) West Lancs. Rural Schools' Games	
	(*e*) Banks P.M. Football Association	
9	Oswaldtwistle Paddock	12
10	District 10 School Games	9
11	District 11 School Games	5
12	District 12 School Games	8
13	Padiham and District Elementary Schools	6
14	Adlington Schools' Sports	4
	Coppull Schools' Games	4
	Withnell Schools	5
16	Ormskirk and District	7
	Skelmersdale	6
19	Orrell Schools' Games	4
	Ashton-in-Makerfield Schools' Sports	6
	Ashton-in-Makerfield Central Schools	2
20	Turton District	7
21	Westhoughton Schools' Athletic	6
	Horwich Schools' Sports...	5
22	Kearsley Athletic...	12
23	Ramsbottom Peel Brow Schools' Sports	2
25	Prestwich and Whitefield Schools' Games	10
26	Littleborough, Smallbridge and Wardle Day Schools' Games	10
	Milnrow District Schools' Games	5
	Whitworth District Schools' Games	5
	Norden District Games	3
28	Litherland Schools' Organised Games	8
	Great Crosby School Games	4

District No.	Name of Association.	No of. School or Dept.
29	Eccleston and Moss Bank Schools' Athletic	2
	Rainhill C. E. Schools	2
	Whiston Central Schools	2
30	Newton-in-Makerfield Sports	10
	Haydock Senior Schools	2
	Warrington and District Teachers	3
	Penketh and Great Sankey	2
31	Tyldesley Schools' Sports	9
	Atherton Schools' Athletic	10
32	Makerfield (Golborne) Sports	3
	Makerfield (Lowton) Sports	3
	Makerfield (Glazebury) Sports	3
33	Irlam and Cadishead Schools' Sports	8
	Urmston and Flixton District Schools' Athletic	8
34	Worsley and District Schools' Sports	8
35	Denton and Haughton Schools' Cricket League	5
	Failsworth and District Schools' Athletic	5
	Total	332

INSTRUCTION IN SWIMMING.

1.—Progress in Swimming Instruction.—Reports have now been received from 160 Departments which carried out a Programme of Instruction in Swimming during the year 1932. These indicate that Swimming Instruction has become a valuable and much appreciated feature in the curriculum of these schools. The appreciation of the benefits derived is not confined to the children, but is widely expressed by Local Committees, Managers, parents and others interested in the school work and the extent to which voluntary assistance is given, not only in organising swimming galas, and in providing competitive trophies, but also in the actual instruction from session to session at the baths is very gratifying.

Appreciation of the facilities afforded by the Committee is general and expressed in very warm terms. The advance which has been made in recent years is shown in the table given below :—

Year.	Total No. of Children.
1929	6,823
1930	8,129
1931	8,753
1932	9,107
1933	10,184*

*This number does not include 600 children from schools in one area which carry out a programme of Instruction in Swimming without financial assistance from the Committee.

2.—Standard of Proficiency.—One thousand six hundred and thirteen swimming certificates have been issued on behalf of the Committee during the last season, as against 1,608 in the previous year. These certificates are much appreciated, and suggestions have been received that higher certificates, or badges for bathing costumes, would be greatly valued, expecially in schools where swimming instruction has been included in their curriculum for a number of years.

Increasingly advanced instruction at the baths is being given, and several schools report successes of children in the examinations of the Royal Life Saving Society and in the greater variety of events in school and other swimming galas. Some of the displays given by larger schools at the annual swimming galas were noted for the standard attained by the children, and reflected much credit upon the staffs of the schools responsible for the instruction.

3.—*Arrangements at the Baths.*—As in former years it is evident that the co-operation of Borough Authorities and Baths Officials has been most helpful.

4.—Applications from schools for grants for the year 1933–34 for Swimming Instruction are shown in the following table :—

District No.	Name of School.	No. of Schools or Depts.	Baths to be Attended.
1	Dalton-in-Furness C.E.	9	Barrow
	Kirkby Ireleth The Burlington ...		Do.
	Askam Senior Council		Do.
	Dalton-in-Furness Broughton Road C.		Do.
	Dowdales Central C.		Do.
	Grange C.E.		Grange
	Allithwaite C.E.		Do.
	Lindale C.E.		Do.
	Cartmel C.E.		Do.
2	Nether Kellet Council	2	Lancaster
	Ellel Dolphinholme St. Mark's ...		Do.
4	Fleetwood St. Mary's R.C.	9	Fleetwood
	Fleetwood Chaucer Road Council ...		Do.
	Fleetwood Milton Street Council ...		Do.
	Fleetwood Bailey Senior Council ...		Do.
	Fleetwood Bailey Senior Council (Girls)		Do.
	Thornton Cleveleys Senior Council (Boys)		Do.
	Thornton Cleveleys Senior Council (Girls)		Do.
	Poulton-le-Fylde C.E.		Kirkham
	Poulton-le-Fylde Hodgson Senior C. ...		Do.
5	Kirkham C.E. (Boys)	8	Kirkham
	Kirkham C.E. (Girls)		Do.
	Kirkham The Willows R.C.		Do.
	Wesham C.E.		Do.
	Wesham R.C.		Do.
	Ribby-with-Wrea Endowed C.E. ...		Do.
	Freckleton C.E.		Do.
	Kirkham and Wesham Council ...		Do.
6	Longridge Berry Lane	4	Preston
	Longridge St. Wilfrid's R.C.		Do.
	Longridge R. Smith's (Boys)		Do.
	Woodplumpton C.E.		Do.
7	Brownedge St. Mary's	8	Walton-le-Dale
	Brownedge R.C.		Do.
	Walton-le-Dale St. Patrick's R.C. ...		Do.
	Lostock Hall Council		Do.
	North Meols Banks P.M.		Southport
	North Meols St. Stephen's		Do.
	Longton Council		Do.
	Tarleton Council		Do.
10	Salesbury	4	Blackburn
	Livesey Cherry Tree		Do.
	Belthorn Independent		Do.
	Feniscowles Council		Brinscall
11	Brierfield Walter Street Council ...	3	Burnley
	Brierfield Holy Trinity		Do.
	Worsthorne Council		Do.
12	Barrowford Council	4	Nelson
	Barrowford St. Peter's and St. Paul's R.C.		Do.
	Foulridge C.E.		Colne
	Trawden Council		Do.

District No.	Name of School.	No. of Schools or Depts.	Baths to be Attended.
13	Padiham C.E. (Senr.)	5	Burnley
	Padiham St. John Baptist's R.C. ...		Do.
	Padiham Council		Do.
	Hapton C.E.		Do.
	Hapton Council		Do.
14	Brinscall Methodist	12	Brinscall
	Withnell St. Joseph's		Do.
	Withnell C.E.		Do.
	Withnell Fold Methodist		Do.
	Withnell United Methodist		Do.
	Adlington C.E.		Do.
	Wheelton Council		Do.
	Anderton St. Joseph's R.C.		Do.
	Coppull Moor C.E.		Do.
	Charnock Richard C.E.		Do.
	Adlington St. Paul's C.E.		Do.
	Adlington and District Council ...		Do.
15	Whittle-le-Woods South Hill R.C. ...	1	Brinscall
16	Skelmersdale Blaguegate Methodist ...	6	Southport
	Skelmersdale Endowed		Do.
	Skelmersdale R.C.		Do.
	Ormskirk United Charity (Boys) ...		Do.
	Skelmersdale Council		Do.
	Maghull C.E.		Walton, Liverpool
18	Shevington Broad-o'th'-Lane Council ...	1	Wigan
19	Orrell R.C.	5	Wigan
	Ashton-in-Makerfield Park Lane Undl.		Do.
	Orrell Lamberhead Green Council ...		Do.
	Orrell St. James' Road Council ...		Do.
	Abram St. Andrew's		Leigh
20	Turton Eagley Mills	3	Egerton
	Turton Walmsley C.E.		Do.
	Turton Belmont C.		Do.
21	Westhoughton Hulton C.E.	1	Bolton
22	Wharton Presbyterian	4	Farnworth
	Kearsley West Council	...	Do.
	Little Hulton East C.		Do.
23	Walmersley-cum-Shuttleworth Buckhurst C.E.	1	Bury
25	Whitefield Stand All Saints' C.E. ...	3	Radcliffe
	Whitefield Higher Lane Council ...		Do.
	Prestwich Hope Park Senior Council ...		Salford (Broughton)
26	Littleborough Dearnley C.E.	9	Rochdale
	Littleborough C.E.		Do.
	Milnrow C.E.		Do.
	Littleborough Shore C.		Do.
	Littleborough Central Council		Do.
	Milnrow Moorhouse C.	...	Do.
	Wardle Central (Senr.)		Do.
	Norden Council		Do.
	Whitworth, Leavengreave Council ...		Bacup

District No.	Name of School.	No. of Schools or Depts.	Baths to be Attended.
28	Litherland R.C.	10	Bootle
	Litherland St. Philip's C.E.		Do.
	Litherland Lander Road Council (Boys)		Do.
	Litherland Lander Road Council (Girls)		Do.
	Litherland St. Elizabeth's R.C. (Boys)		Do.
	Litherland St. Elizabeth's R.C. (Girls)		Do.
	Litherland Beach Road Council (Boys)		Do.
	Litherland Beach Road Council (Girls)		Do.
	Litherland Central C. (Boys)		Do.
	Litherland Central C. (Girls)		Do.
29	Halewood C.E.	3	Garston
	Whiston Central C. (Girls)		St. Helens
	Whiston Central C. (Boys)		Do.
30	Haydock R.C.	14	St. Helens
	Haydock C.E.		Do.
	Haydock Senior Boys		Do.
	Haydock Senior Girls		Do.
	Newton-le-Willows St. Mary's R.C.		Warrington
	Newton-in-Makerfield St. Peter's C.E.		Do.
	Newton-in-Makerfield Wargrave C.E.		Do.
	Poulton-with-Fearnhead Padgate C.E.		Do.
	Winwick C.E.		Do.
	Woolston-with-Martinscroft R.C.		Do.
	Great Sankey Council		Do.
	Penketh Council		Do.
	Earlestown Central C. (Girls)		Do.
	Earlestown Central C. (Boys)		Do.
31	Boothstown R.C.	20	Tyldesley
	Boothstown Methodist		Do.
	Tyldesley Central C.E.		Do.
	Tyldesley Mosley Common C.E.		Do.
	Tyldesley Upper George Street Council (Girls)		Do.
	Tyldesley C.E. (Boys)		Do.
	Tyldesley C.E. (Girls)		Do.
	Astley C.E.		Do.
	Astley Marsland Green		Do.
	Tyldesley Council (Boys)		Do.
	Hesketh Fletcher Senior (Girls)		Atherton
	Hesketh Fletcher Senior (Boys)		Do.
	Atherton Bag Lane		Do.
	Atherton Bolton Road		Do.
	Atherton Chowbent		Do.
	Atherton Hindsford C.E.		Do.
	Atherton Howe Bridge C.E.		Do.
	Atherton Lee Street Undemoninational		Do.
	Atherton St. Richard's		Do.
	Atherton St. James' R.C.		Do.
32	Lowton Council	3	Leigh
	Lowton St. Mary's		Do.
	Culcheth Council Senior		Culcheth
33	Flixton Senior (Boys)	3	Urmston
	Flixton Senior (Girls)		Do.
	Urmston English Martyrs		Do.
34	Worsley, Little Hulton St. John's Ellesmere	3	Farnworth
	Worsley Senior C. (Boys)		Do.
	Worsley Senior C. (Girls)		Do.

District No.	Name of School.	No. of Schools or Depts.	Baths to be Attended.
35	Denton Christ Church C.E.	21	Gorton
	Denton Central Council		Do.
	Haughton Green St. Mary's C.E. ...		Hyde
	Haughton St. Anne's		Do.
	Audenshaw C.E.		Ashton-under-Lyne
	Waterloo Christ Church		Do.
	Waterloo Council		Do.
	Leesfield C.E.		Oldham
	Lees Zion U.M.		Do.
	Lees St. Edward's R.C.		Do.
	Failsworth St. John's C.E.		New Moston
	Failsworth Holy Trinity		Newton Heath
	Failsworth St. Mary's R.C.		Do.
	Failsworth Minor Street Council (Girls)		Newton Heath and Hollinwood
	Failsworth Minor Street Council (Boys)		Hollinwood
	Bardsley C.E.		Hathershaw
	Droylsden Manchester Road Council		Bradford and Manchester
	Droylsden Moorside C.		Higher Openshaw
	Audenshaw Council		Whitworth
	Fairfield Road Council		Do.
	Audenshaw Poplar Street Council ...		Do.

SCHOOL CAMPS AND SCHOOL JOURNEYS.

As in 1931–32, a sum of £500 was set aside in the Estimates to provide financial assistance to schools undertaking School Camps or School Journeys under the Committee's Regulations.

Applications for grants were received from 48 Schools, and a grant was awarded in each case, but only 37 schools were able to carry out their proposals for School Camps or School Journeys.

The following table shows the figures for the three years since the scheme was inaugurated by the Committee :—

Year.	No. of Schools.	Nos. taking part.	
		Children.	Teachers.
1930–31 ...	30	955	76
1931–32 ...	54	1587	107
1932–33 ...	37	1071	97

The Camps or Journeys were usually held in the months of July and August, although a few occurred at Whitsuntide. All Camps, except one, were for one week.

Of the 37 Camps, 26 were in North Wales, the remainder were at Staithes, or in the Lake District, with the exception of one, which was held in the Isle of Sheppey. The last was particularly interesting to the children on account of two visits to London during which they were entertained by the Local Member at the Houses of Parliament and by officials of the Toc H Movement at their Headquarters in Talbot House.

Reports from the Schools.

The Schools which were able to carry out the full programme of their proposed School Camps or Journeys were mainly those who had had experience in previous years. These commented upon the steady increase in the success of their Camps and in the growing interest and enthusiasm of the children and parents. The programmes which have been prepared in advance, the notes made during the Camp and the booklets compiled after their return form records which, apart from their interest, are of educational value.

The appreciation by parents and children who have joined School Camps or School Journeys has been widely expressed, and many schools owe a great deal to the interest and practical assistance of voluntary workers, especially School Managers and members of Local Committees, who have generously helped schools to carry out their programmes in unusually difficult circumstances.

PROVISION OF MEALS AND MILK FOR ELEMENTARY SCHOOL CHILDREN.

In the Annual Report for 1929 full details were given of the scheme which was inaugurated at the end of the year 1928 for the provision of mid-day meals, fresh milk, and cod liver oil, etc., for school children. The method of administering the scheme has not changed. It will be seen from the following tables that the number of individual children receiving meals or milk during the year has increased. During the year 1932 a mid-day meal or fresh milk was supplied to children in 26 of the 34 Local Education Districts in the Administrative County Area ; and of the number of children on the roll of Elementary Schools in the County Area 7·75 per cent. received either milk or mid-day meals.

During the year the provision of mid-day meals for children was commenced in the Township of Withnell.

The provision of fresh milk was commenced during the year in the Townships of Fleetwood, Whalley, Blackburn Rural District, Burnley Rural District, Ormskirk, Crompton, Royton, Leigh Rural District, Urmston.

The average cost per meal per child in 1932 was 4·04d. for food only, and 5·28d. for food and administration, compared with 3·89d. and 5·46d. respectively in 1931. It should be pointed out, however, that in the few cases where meals are supplied in a café, or where the contractor supplies and also serves the meals, the cost is shown under the heading as the cost of food only, but actually the cost includes a certain amount of administration.

The average cost per pint of milk in 1932 was 2·57d. for milk only, and 2·83d. for milk and administration, compared with 2·39d. and 2·63d. respectively in 1931.

The following table shows the Townships in which mid-day meals were provided, the number of meals provided, and the cost :—

Area No.	Township.	Amount spent.		No. of meals provided.	Average cost per meal.	
		Food.	Total.		Food.	Total.
		£ s. d.	£ s. d.		d.	d.
9	Great Harwood ...	653 9 7	752 15 0	44810	3·50	4·03
	Clayton-le-Moors ...	426 6 0	444 10 0	25578	4·00	4·17
	Church	294 17 4	310 18 4	17692	4·00	4·21
	Rishton	58 16 6	65 15 0	4706	3·00	3·35
	Oswaldtwistle ...	226 17 3	240 17 8	18149	3·00	3·19
13	Padiham	683 10 7	795 2 7	41485	3·95	4·60
14	Withnell	76 9 11	120 9 4	4080	4·50	7·09
	Adlington	192 12 0	328 9 3	9460	4·89	8·33
	Chorley R. (Coppull)	120 14 2	197 5 8	6160	4·70	7·69
18	Standish	289 3 6	406 13 5	23134	3·00	4·22
	Blackrod	181 13 4	280 11 10	10900	4·00	6·18
	Aspull	1157 2 0	1478 2 0	69426	4·00	5·11
	Wigan R. (Crooke) ...	126 18 9	239 16 7	10155	3·00	5·67
19	Ashton-in-Makerfield	479 19 5	901 7 9	53025	2·17	4·08
21	Westhoughton ...	874 9 9	1254 4 7	44643	4·70	6·74
	Horwich	340 1 0	539 16 0	20403	4·00	6·35
22	Kearsley	598 1 8	766 0 3	28708	5·00	6·40
	Little Hulton	486 13 10	609 14 8	21198	5·51	6·90
	Little Lever	401 0 10	498 4 1	19250	5·00	6·21
	Barton-upon-Irwell R. (Clifton)	144 16 8	216 10 10	6952	5·00	7·48

Area No.	Township.	Amount spent.		No. of meals provided.	Average cost per meal.	
		Food.	Total.		Food.	Total.
		£ s. d.	£ s. d.		d.	d.
23	Ramsbottom	337 7 6	406 1 10	15007	5·40	6·49
	Bury R. (Turn) ...	126 4 0	132 13 7	5048	6·00	6·31
25	Whitefield	113 14 0	135 1 4	4832	5·65	6·71
	Prestwich	185 19 2	251 9 11	8926	5·00	6·76
	Bury R. (Ringley) ...	337 1 8	413 15 7	16180	5·00	6·14
30	Haydock ...	1714 19 11	2170 5 9	106220	3·87	4·90
	Newton-in-Makerfield	1767 6 5	2190 4 2	107834	3·93	4·87
	Warrington R. (Burtonwood) ...	596 18 2	747 0 9	36970	3·87	4·85
31	Tyldesley	320 7 0	373 12 0	17087	4·50	5·25
	Atherton	324 11 2	426 18 10	17310	4·50	5·92
	Leigh R.D. (Astley) ...	177 19 0	247 17 11	9491	4·50	6·27
32	Golborne	480 0 0	631 13 1	28800	4·00	5·26
	Leigh R. (Lowton) ...	127 19 0	196 7 11	7677	4·00	6·14
34	Worsley	509 16 5	764 5 11	26788	4·57	6·85
		14933 17 6	19534 13 5	888084	4·04	5·28

The following table shows the townships in which fresh milk was provided, the quantity of milk provided, and the cost:—

Area No.	Township.	Amount spent.		No. of pints of milk provided.	Average cost per pint.	
		Milk.	Total.		Milk.	Total.
		£ s. d.	£ s. d.		d.	d.
1	Dalton-in-Furness ...	230 0 1	256 14 9	21439⅙	2·57	2·87
	Ulverston	133 15 11	153 6 2	10703⅔	3·00	3·44
	Grange...	5 16 2	6 5 4	558	2·50	2·70
	Ulverston R.	69 3 8	77 9 7	6613½	2·51	2·81
4	Fleetwood	9 2 7	11 12 7	755	2·90	3·70
6	Longridge	73 3 9	91 0 6	5617	3·13	3·89
	Preston R.	13 13 1	15 16 4	1025	3·20	3·70
7	Walton-le-Dale ...	13 5 9	13 5 9	1063	3·00	3·00
8	Whalley	81 14 11	106 14 11	8205⅓	2·39	3·12
10	Blackburn R. ...	134 5 10	148 15 10	12516	2·58	2·85
12	Barrowford	– 14 9	– 14 9	59	3·00	3·00
	Burnley R.	1 5 6	1 5 6	123	2·50	2·50
13	Burnley R.	2 5 0	3 6 2	216	2·50	3·68
14	Withnell	76 4 11	82 2 4	6359	2·88	3·10
	Chorley R.	89 4 9	94 12 11	7846½	2·73	2·89
15	Leyland	67 19 0	75 17 11	5448	2·99	3·34
	Chorley R.	152 9 5	168 7 3	13776½	2·66	2·93
16	Ormskirk	2 9 2	2 9 2	223	2·65	2·65
18	Blackrod	120 6 0	123 6 6	11075	2·61	2·67
	Wigan R.	107 4 7	110 12 7	9782	2·63	2·71

Area No.	Township.	Amount spent.						No. of pints of milk provided.	Average cost per pint.	
		Milk.			Total.				Milk.	Total.
		£	s.	d.	£	s.	d.		d.	d.
19	Upholland	224	17	7	236	19	4	23726⅔	2·27	2·40
	Orrell	352	8	7	372	10	1	32457	2·61	2·75
	Billinge	102	13	8	108	4	0	9784	2·52	2·65
	Abram	155	6	8	166	1	1	14537	2·56	2·74
23	Ramsbottom	49	11	3	55	11	4	4759	2·50	2·80
	Bury R.	9	13	8	10	13	8	930	2·50	2·76
24	Tottington	79	14	4	98	3	2	8318	2·30	2·83
	Bury R.	15	3	6	19	6	2	1399	2·60	3·31
25	Bury R.	–	9	0	–	12	2	36	3·00	4·06
27	Crompton	150	1	8	168	18	9	12006⅔	3·00	3·38
	Royton	139	7	0	157	3	3	11148	3·00	3·38
30	Warrington R. ...	347	4	1	354	0	8	31130½	2·68	2·73
32	Leigh R.	2	1	8	3	2	3	170	2·94	4·39
33	Irlam	152	10	7	176	5	11	17036½	2·15	2·48
	Urmston	119	1	1	135	17	7	12032	2·37	2·71
	Barton-upon-Irwell R.	94	12	5	106	0	7	9564	2·37	2·66
35	Droylsden	140	19	6	167	12	10	16917	2·00	2·38
		£3520	1	1	£3880	19	8	329355	2·57	2·83

The following table shows the Number of individual Children provided with either Milk or Mid-day Meals :—

Township.	No. of individual children who received	
	Milk.	Mid-day Meals.
Dalton	174	...
Ulverston	127	...
Grange	3	...
Ulverston R.D.	54	...
Fleetwood	53	...
Longridge	33	...
Preston R.D.	4	...
Walton-le-Dale	6	...
Whalley	76	...
Great Harwood	...	359
Clayton-le-Moors	...	201
Church	...	121
Rishton	...	48
Oswaldtwistle	...	158
Blackburn R.D....	82	...
Barrowford	1	...
Burnley R.D.	7	...
Padiham	...	306
Withnell	51	58
Adlington	...	66
Chorley R.D.	142	53
Leyland	49	...
Ormskirk	1	...
Standish	...	131

Township.	No. of individual children who received.	
	Milk.	Mid-day Meals.
Blackrod	48	55
Aspull	...	389
Wigan R.D.	54	57
Upholland	230	...
Orrell	382	...
Billinge	105	...
Ashton-in-Makerfield	...	411
Abram	204	...
Westhoughton	...	307
Horwich	...	168
Kearsley	...	205
Little Hulton	...	140
Little Lever	...	128
Barton-upon-Irwell R.D.	59	38
Ramsbottom	30	101
Bury R.D.	19	132
Tottington	58	...
Whitefield	...	65
Prestwich	...	80
Crompton	155	...
Royton	164	...
Haydock	...	502
Newton-in-Makerfield	...	797
Warrington R.D.	161	190
Tyldesley	...	113
Atherton	...	95
Leigh R.D.	5	85
Golborne	...	152
Irlam	119	...
Urmston	87	...
Worsley	...	191
Droylsden	173	...
	2,916	5,902

During the year Cod Liver Oil and Malt, etc., as shown below, were supplied to school children :—

		£	s.	d.
8443 lbs. of Cod Liver Oil and Malt	... at a cost of	276	3	3
168 bottles of Cod Liver Oil	... ,,	3	16	3
62 bottles of Aberdeen Emulsion ...	... ,,	3	0	8
64 lbs. of Vitamalt	... ,,	4	10	8
49 tins of Virol	... ,,	2	9	0
44 bottles of Cod Liver Oil Emulsion	... ,,	3	6	0
9 tins of Maltoline	... ,,	0	6	0
		£293	11	10

CO-OPERATION OF PARENTS.

During the year the Medical Officers interviewed 30,111 parents in schools and clinics and visited 861 homes, whilst the Nurses interviewed in school 1,404 parents and visited 14,643 homes ; 145,193 attendances were made by children of pre-school age at Child Welfare Centres, each one representing an interview of a parent with either Doctor or Nurse.

In addition, the Nurses paid 89,851 visits to the homes of young children, infants or expectant mothers, etc. The opportunities thus shown for interviews with parents are frequent, and there is, at the present time, scarcely any of the hostility which was not uncommon in the early days of School Medical Inspection.

CO-OPERATION OF TEACHERS.

Teachers continue to take an eager interest in the work of medical inspection and place all facilities at the disposal of the Medical Officer and School Nurse. Their advice with regard to home conditions and status of pupils and parents is always welcomed,

CO-OPERATION OF SCHOOL ATTENDANCE OFFICERS.

The following table shows some of the figures relating to the School Attendance Officers' duties in 1932 :—

No. of interviews with Medical Officers	1,072
No. of interviews with School Nurses	1,561
No. of visits to homes, arising out of Medical Inspection ...	1,648
No. of cases specially presented to the Medical Officers and School Nurses	1,788

CO-OPERATION OF RATE-AIDED AND VOLUNTARY BODIES.

The Medical Officers are in touch with the rate-aided bodies such as Guardians' Committees and District Councils ; the School Attendance Officers, School Nurses and Health Visitors very often being the media of communication.

The Attendance Officers continue to perform numerous duties not directly connected with school attendance. The supervision of the employment of children entails work at irregular hours and often on Saturdays and Sundays. Other work connected with the physical welfare of children and with the activities of the School Medical Department continues to increase. Cases where children are neglected by their parents are frequently dealt with in co-operation with the National Society for the Prevention of Cruelty to Children without resorting to prosecution. The Attendance Officers are also frequently called on to arrange for sending children to convalescent homes or to the seaside for recuperation after illness, and they are often closely concerned with the arrangements for the transfer of children to Special Schools. The Annual Reports from the districts invariably record gratifying instances of active philanthropic work.

The Local Area Clerks are fully acquainted administratively and otherwise with the voluntary agencies for the relief of necessitous school children.

BLIND, DEAF, DEFECTIVE, AND EPILEPTIC CHILDREN.

The methods and policy of the Committee for ascertaining and dealing with children who are defective within the meaning of the Elementary Education (Blind and Deaf Children) Act, 1899 and 1914, are unchanged and have previously been described.

Blind Children.

The number of children on the Special Register who were considered as blind children in the year 1932 was 71 boys and 58 girls. Of these, 12 boys and 19 girls were totally blind, and 59 boys and 39 girls had some residual vision.

Attending Certified Schools or Classes for the Blind were 39 boys and 31 girls. During the year 7 blind children were reported on, and in the following table the causes of blindness are reported as :—

Cerebral Amaurosis	1
Congenital Defect	1
Optic Atrophy	1
Congenital Central Choroidal Atrophy	1
Complete Leucoma, Microphthalmos and Ophthalmia Neonatorum	1
High Myopia and Degeneration of Retina	1
Corneal Scarring, Opacity of Lens and Corneal Ulceration ...	1
	7

The number of children of Elementary School age who were maintained in 1932 at the following Institutions for the Blind was 39 boys and 31 girls. The annual cost of maintenance was £4,025 7s. 6d. or an average cost of £57 10s. 1d. a child.

	Boys.	Girls.	Total.
Burnley Blind School	1	1	2
Catholic Blind Asylum, Liverpool ...	1	5	6
Homes for the Blind, Fulwood ...	10	7	17
Liverpool School for the Blind ...	3	7	10
Oldham Blind School	3	5	8
Thomasson Memorial School, Bolton	7	1	8
Henshaw's Institution, Manchester ...	13	4	17
Sunshine Home, Southport	1	...	1
Chorley Wood Cottage, Watford ...	–	1	1
	39	31	70

DEAF CHILDREN.

On the Register for 1932 there were 62 boys and 49 girls, of whom 30 boys and 23 girls were totally deaf, and 32 boys and 26 girls had residual hearing. Of all these 111 children, there were in attendance at the Special Certified Schools or Classes for the Deaf 31 boys and 31 girls, as shown below. The annual cost of maintenance was £4,153 10s. or an average cost of £66 19s. 10d. a child.

	Boys.	Girls.	Total.
Burnley Deaf School	1	2	3
Liverpool School for the Deaf... ...	1	2	3
Oldham Deaf School	1	–	1
Royal Schools for the Deaf, Manchester	13	15	28
St. John's Institution, Boston Spa ...	3	1	4
Thomasson Memorial School, Bolton...	2	4	6
Royal Cross Schools for the Deaf, Preston	10	7	17
	31	31	62

During the year 2 deaf children of Elementary School age were reported on, and the following causes of their deafness are shown :—

Congenital	1
Imperfect Development of Labyrinths	1
	2

The importance of sending these cases for special training at the earliest age, at four if possible, cannot be sufficiently impressed on parents and teachers ; time lost at the beginning can never be recovered.

EPILEPTIC CHILDREN.

On the Register there are noted 128 boys and 90 girls as suffering from Epilepsy, of whom 57 are severe and 161 not severe. Seventeen of these children are maintained at Institutions for Epileptics, at a cost of £1,048 13s. or an average cost of £61 13s. 8d. a child.

MENTALLY DEFECTIVE CHILDREN.

There were, in 1932, 356 children noted in the Elementary Education Area as being feeble-minded, viz., 215 boys and 141 girls. In addition, 25 children were notified to the Local Control Authority, in this case the Lancashire Asylums Board, as being ineducable.

EDUCATION OF THE BLIND.

The education of the Blind has been fully described in a previous Report. It is still necessary to point out that Blind Children educated at Special Schools are not necessarily Blind Persons when they reach school leaving age. For a few years before leaving school special attention is directed towards securing a partial vocational training for these children, so that they are not discharged into a world which is unwilling or unable to receive them.

During the past year the Lancashire Education Committee paid the training fees in respect of 101 students. The following table shows the Institutions the trainees attended, and also the occupations for which they were being trained.

LIVERPOOL SCHOOL FOR THE BLIND,
HARDMAN STREET.

	Males.	Females.	Total.
Basket Making	1	–	
Boot Repairing	2	–	
Chair Seating and Light Basketry	–	1	
Machine Knitting	–	2	
Chair Seating and Machine Knitting...	–	1	
Machine Knitting and Chair Caning	–	1	
Basket Making and Boot Repairing...	1	–	
Chair and Rush Seating, Light Basketry and Round Machine Knitting...	–	1	
Machine and Hand Knitting and Light Basketry ...	–	1	
Total	4	7	11

CATHOLIC BLIND ASYLUM, LIVERPOOL.

	Males.	Females.	Total.
Chair Caning and Rush Seating	–	2	
Mat Making	2	–	
Flat Machine Knitting	–	1	
Total	2	3	5

WORKSHOPS FOR THE BLIND, CORNWALLIS STREET, LIVERPOOL.

Mat Making	1	–	
Chair Seating and Mat Making	1	–	
Total	2	–	2

BLACKBURN WORKSHOPS FOR THE BLIND.

Chair Caning and Machine Knitting	–	1	
Brush Making	3	–	
Machine Knitting	–	1	
Total	3	2	5

BURNLEY WORKSHOPS FOR THE BLIND.

Machine Knitting	–	2	
Boot Repairing	2	–	
Basket Making	2	–	
Total	4	2	6

BOLTON WORKSHOPS FOR THE BLIND.

Brush Making	1	–	
Cane Seating	–	2	
Basketry	–	1	
Hand Knitting and Rug Making	–	1	
Mat Making	6	–	
Rug Making, Basketry and Knitting...	–	1	
Total	7	5	12

HENSHAW'S INSTITUTION FOR THE BLIND, MANCHESTER.

Piano Tuning and Repairing	3	–	
Machine Knitting	–	6	
Skip Making and Basketry	1	–	
Brush Making	5	–	
Light Basketry	1	3	
Boot Repairing	8	–	
Furniture Making	5	–	
French Polishing	–	1	
Light Skip Making	1	–	
Piano Tuning and Furniture Assembling	1	–	
Hand Loom Weaving	–	3	
Chair Caning	–	2	
Round Knitting and Chair Seating	–	1	
Mat Making	1	–	
Total	26	16	42

HOMES FOR THE BLIND, FULWOOD.

Brush Making	5	–	
Boot Repairing	6	–	
Machine Knitting	–	4	
Basket Making	1	–	
Total	12	4	16

Royal Normal College, London.

	Males.	Females.	Total.
Teaching of Music	–	1	
Piano Tuning and Teaching of Music...	1	–	
Total	1	1	2

Totals, Males	61
Totals, Females	40
Total ...	101

TRAINING OF DEAF PERSONS.

During the year twenty-four Deaf Persons received secondary education at the following Institution :—

Royal Residential School for the Deaf, Old Trafford.

INSPECTION OF SECONDARY SCHOOL CHILDREN.

The increasing numbers of Secondary School children bring into increasing prominence the problems connected with their medical inspection. All entrants are inspected and each child is subject to routine inspection annually from the age of 12. Attention is called to the amount of defective vision in Secondary Schools. If treatment and observation cases are added together it will be found from an inspection of the subsequent tables that there is an increase amongst boys from 14·7 per cent. at 8 years of age to 29·4 per cent. at 17—19 years of age. With the girls the corresponding percentages are 18·3 per cent. and 35·2 per cent. The statistics from the Technical Schools are based on numbers too small for purposes of comparison, but it seems fairly clear that there is positive association between Secondary education and defective vision. Whether the Secondary education is the main causative factor in defective vision or whether those with a tendency to defective vision have a greater predilection to a studious life are problems still awaiting solution.

The Secondary Schools number 48, *viz.*, 12 Boys, 10 Girls and 26 Mixed, containing in all 16,011 pupils, together with three Day Continuation Schools and eight Junior Technical Schools whose combined average attendance is approximately 652. In addition to the Medical Inspection of all the Secondary School children in schools "provided" by the County, the services of the staff have been made available for inspection in the six "aided" schools, but to date only one such school has taken advantage of the facilities.

Method of Inspection.

The method of inspection has been described in detail in previous Annual Reports, and need not be repeated here.

In the following table the pupils attending these schools are shown in two groups, *i.e.*, those attending Secondary Schools and those attending Technical and Continuation Schools. The table shows the number of pupils examined during 1932 in the various age groups :—

Age.	No. of Pupils examined.			
	Secondary Schools.		Technical and Continuation Schools.	
	Boys.	Girls.	Boys.	Girls.
8	29	10	...	...
9	44	21	...	...
10	202	106	...	...
11	795	524	...	...
12	1,211	1,002	30	...
13	873	773	156	...
14	780	623	180	31
15	666	603	79	28
16	526	334	55	1
17	227	213	15	...
18	112	77	...	...
19	15	5	1	...
Totals	5,480	4,291	516	60

Number of Pupils re-examined—

Secondary Schools	637
Technical and Continuation Schools	14

Number of Parents interviewed—

Secondary Schools	809
Technical and Continuation Schools	10

The following table shows the work done in Secondary, &c., Schools by the Medical Officers at visits other than routine visits :—

No. of re-visits paid to schools	102
No. of children examined at re-visits	2,078
No. of children recommended for specific medical treatment	345
No. of parents interviewed at school	234

Findings of Medical Inspection.

The following tables show the results of the routine medical inspection. All "Entrants" and all pupils of twelve years of age and over are examined each year.

Secondary Schools.

			Boys.							Girls.						
			Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19	Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19
	No Examined		1070	1211	873	780	666	526	354	661	1002	773	623	603	334	295
	Pupils having Defects		43·0	41·7	40·4	43·2	39·5	41·4	50·0	44·2	42·9	51·6	49·5	50·7	50·3	50·8
Mental Condition.	Dull and Backward	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Feeble-minded	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Imbeciles	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Idiots	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Malnutrition	T	0·09	0·08	...	...	...	...	...	0·2	0·2	0·1	...	...	...	...
		O	0·5	0·4	0·3	0·3	0·2	0·2	...	1·2	0·1	...	...	0·2	...	...
Uncleanliness.	Head	T	...	0·2	0·2	...	...	...	...	0·3	0·9	0·3	0·5	...	...	...
		O	...	...	...	...	...	...	...	2·7	1·6	1·9	0·6	0·7	...	0·3
	Body	T	...	...	0·1	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	0·2	...	...	...	...	...	...
Skin.	Ringworm. Head	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	0·3	0·2	...	...	0·2	...	...
	Ringworm. Body	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Scabies	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Impetigo	T	0·09	0·08	...	0·1	0·2	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Diseases (Non-Tubercular)	T	0·3	0·3	0·5	0·1	0·8	0·8	0·3	0·3	0·9	0·6	0·5	1·7	...	0·3
		O	0·5	0·3	0·2	1·0	0·9	1·0	1·7	0·6	0·6	1·9	2·4	3·5	3·3	4·1
Eye Diseases.	Defective Vision	SP	6·1	5·8	6·9	7·7	8·6	8·0	11·6	8·8	9·1	12·3	9·3	9·6	8·7	9·8
		O	8·6	10·6	10·4	11·7	12·8	13·7	17·8	9·5	13·1	13·2	15·2	16·6	23·4	25·4
	Squint	T	0·3	0·3	...	0·1	...	0·2	...	0·2	0·1	0·1	0·2	0·2	...	...
		O	0·7	0·08	0·5	0·5	...	0·2	...	1·1	0·5	0·5	1·1	1·0	0·3	0·3
	Conjunctivitis	T	...	0·08	0·2	0·1	0·2	...	...	0·2	...	...	...	0·2	...	...
		O	0·09	0·2	...	0·4	...	...	...	...	...	0·1	...	...	...	...
	Blepharitis	T	0·6	0·2	...	0·1	0·2	...	...	...	0·2	...	0·2	...	...	...
		O	0·3	0·2	0·2	...	...	...	...	...	0·1	0·3	0·3	0·5	...	...
	Keratitis	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Corneal Opacities	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Corneal Ulcer	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	0·09	...	...	...	...	...	...	...	...	...	...	...	...	...

			Boys.							*Girls.*						
			Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19	Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19
Ear Diseases.	Defective Hearing	T	0·7	0·4	0·3	...	0·5	0·4	...	0·3	0·5	0·5	1·0	0·5	0·3	...
		O	0·6	0·5	0·2	0·3	0·3	1·1	0·3	0·5	0·4	0·8	1·8	0·8	0·3	0·3
	Otitis Media	T	0·09	0·2	0·7	0·4	0·5	0·6	...	...	0·1	...	...	...	...	...
		O	0·09	0·08	0·6	...	0·3	...	0·6	0·2	...	...	...	...	...	...
	Other Ear Diseases	T	0·6	1·2	1·1	1·5	0·5	1·0	0·3	...	0·7	0·4	0·6	0·3	0·3	0·3
		O	...	0·08	...	0·1	...	...	...	...	0·2	0·1	0·2	...	...	...
Nose and Throat.	Enlarged Tonsils	T	1·6	1·1	1·4	0·5	0·3	0·2	...	1·7	1·2	0·5	0·6	1·2	...	0·3
		O	5·5	4·7	4·8	2·8	3·3	2·9	1·7	7·0	9·4	8·7	8·2	8·3	7·2	5·1
	Adenoids	T	...	0·08	...	...	...	...	...	0·2	...	0·3	0·2	...	...	...
		O	0·4	0·2	0·1	0·3	0·2	0·2	...	0·2	0·4	...	0·2	...	...	...
	Enlarged Tonsils and Adenoids	T	0·4	0·2	0·1	0·3	...	...	...	0·6	0·4	0·1	0·2	...	...	...
		O	0·8	0·5	0·3	0·4	...	1·3	...	0·5	0·3	0·4	0·5	0·2	...	0·7
	Enlarged Cervical Glands (Non-Tubercular)	T	...	0·08	...	...	...	...	...	...	...	...	...	0·2	0·3	...
		O	4·1	3·6	2·4	3·1	1·4	0·2	0·6	1·7	0·7	0·6	1·0	0·2	...	...
	Defective Speech	T	...	...	...	...	...	...	0·3	...	...	...	...	...	...	...
		O	0·7	0·2	0·6	0·5	0·5	...	0·3	0·6	...	0·1	0·2	0·5	0·6	...
Teeth.	Four or more Carious	T	8·5	7·8	7·1	8·5	7·7	10·8	10·7	6·4	2·9	6·9	5·9	7·6	8·1	5·8
		O	1·6	1·2	1·1	0·6	0·9	1·3	1·1	1·2	1·1	0·9	0·5	0·8	1·5	...
	Sepsis	T	0·5	0·7	0·9	0·5	0·9	0·2	...	...	...	0·6	0·8	0·3	...	0·7
		O	0·09	...	0·1	0·1	...	...	...	...	...	...	...	...	...	...
Heart and Circulation.	Organic	T	0·09	...	...	...	...	...	...	...	0·1	...	...	...	...	0·3
		O	0·09	0·2	0·5	0·3	...	0·4	1·1	0·6	1·7	1·0	1·0	0·8	0·9	1·0
	Functional	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	2·0	2·3	2·7	2·4	2·0	2·3	4·2	1·7	1·0	0·5	0·3	0·3	0·6	...
	Anæmia	T	0·09	0·2	...	...	...	...	...	0·2	0·5	0·6	0·3	0·7	0·9	0·7
		O	0·3	0·2	0·1	0·3	0·2	0·2	0·6	0·3	0·7	0·9	0·5	0·5	2·4	0·3
Lungs.	Bronchitis	T	0·2	0·08	...	...	...	0·2	0·6	...	...	...	...	...	...	...
		O	1·7	1·2	0·7	0·9	0·5	...	0·6	0·2	...	...	...	...	...	...
	Other Non-Tubercular Diseases	T	0·09	...	...	...	...	0·2	...	...	...	0·1	...	...	...	...
		O	0·4	0·08	0·1	0·4	0·5	0·2	0·3	0·5	0·5	0·5	0·3	0·2	0·3	...
Tuberculosis. Pul-monary.	Definite	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Suspected	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	0·1	...	...	...	...	...	...	...	...	...	...
Non-Pulmonary.	Glands	T	...	...	...	0·1	...	...	0·6	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Spine	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	0·2	...	...	...
	Hip	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	0·2	...	...	0·2	...	...	...
	Other Bones and Joints	T	...	0·08	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	0·1	...	...	...	...	...
	Skin	T	...	...	...	...	...	...	0·3	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nervous System.	Epilepsy	T	...	...	...	...	...	...	...	0·2	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chorea	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	0·09	0·08	...	...	...	...	...	...	...	...	...	...	...	...
	Infantile Paralysis	T	...	...	...	...	...	...	...	0·2	...	...	...	...	...	...
		O	0·09	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rickets	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	1·0	0·3	0·2	0·3	0·2	...	...	...	...	...	...	...	...	...
Deform-ities.	Spinal Curvature	T	...	...	0·2	0·1	0·2	0·2	...	0·2	0·2	0·1	...	...	...	...
		O	0·2	0·6	0·2	0·5	0·3	0·2	0·6	0·2	0·5	1·2	1·0	0·3	0·6	1·0
	Other Forms	T	0·5	0·5	0·7	0·3	0·3	...	0·3	1·4	0·8	0·5	1·1	0·7	0·3	...
		O	1·6	1·5	0·8	0·6	0·5	1·1	...	0·5	0·8	1·0	0·5	0·3	0·3	0·3
	Other Diseases or Defects	T	0·7	1·7	0·7	0·3	0·3	0·2	...	1·1	1·3	0·6	1·0	1·0	0·3	0·7
		O	3·0	2·8	1·6	1·8	1·5	1·3	2·3	1·8	1·3	3·1	3·5	4·0	2·4	5·8

The following table gives a summary of the visual acuity, as determined by the Snellen Test Types, of all the pupils examined :—

SECONDARY SCHOOLS.

Boys.

Age last Birthday.	Number Examined.	6		9		12		18		24		36		60		0	
		R.	L.	R.	L.	R.	L	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
8 9 10 11	1070	83·7	82·7	6·8	7·0	2·4	3·0	2·2	1·7	2·0	1·2	0·8	1·8	1·0	1·3	0·9	1·2
12	1211	82·2	81·2	7·5	8·2	2·5	2·6	2·3	2·5	2·1	1·5	1·4	1·7	1·6	1·4	0·4	0·9
13	873	81·9	79·5	6·8	7·9	4·2	3·8	1·5	3·2	2·2	2·2	1·7	1·7	0·6	0·9	1·1	0·8
14	780	81·5	80·4	5·6	6·7	3·7	3·3	2·7	4·0	2·6	2·0	2·6	2·0	0·8	0·9	0·5	0·6
15	666	78·4	78·7	8·1	6·9	3·4	3·3	3·4	3·6	2·9	2·4	2·0	2·5	1·2	1·8	0·6	0·8
16	526	77·8	78·3	5·3	6·1	4·4	3·8	4·6	3·8	2·5	2·5	3·4	3·4	1·1	1·3	0·9	0·8
17 18 19	353	70·8	71·1	10·2	10·8	4·5	4·0	3·7	5·1	4·5	3·7	3·4	2·5	2·0	1·7	0·8	1·1

Girls.

Age last Birthday.	Number Examined.	6		9		12		18		24		36		60		0	
		R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
8 9 10 11	659	79·8	80·2	7·1	5·8	3·5	3·9	2·9	3·0	2·0	1·8	1·3	1·2	1·3	2·0	2·0	2·0
12	1002	76·5	75·9	6·1	6·5	3·4	3·5	3·9	3·8	3·0	3·3	3·0	3·0	2·2	2·0	1·9	2·0
13	773	73·6	73·5	7·2	8·1	3·4	2·5	3·1	3·6	4·1	4·4	2·2	2·6	3·9	2·6	2·5	2·7
14	623	71·9	73·4	8·2	7·2	2·2	3·2	2·7	2·4	4·0	3·9	4·0	3·5	3·7	4·0	3·2	2·4
15	603	71·8	69·8	7·5	8·5	2·5	3·2	4·5	3·8	4·0	4·8	3·8	3·6	2·7	2·7	3·3	3·6
16	334	68·5	67·3	10·2	10·2	3·0	2·7	2·7	4·2	2·7	4·2	4·8	4·5	2·7	2·7	5·4	4·2
17 18 19	295	63·4	65·1	10·1	7·4	5·1	5·1	3·7	4·4	3·4	2·7	4·1	4·7	4·1	6·4	6·1	4·1

TECHNICAL AND CONTINUATION SCHOOLS.

The following table shows the results of the routine medical inspection of Technical and Continuation Schools :—

			Boys.							*Girls.*						
			Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19	Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19
	No. Examined		...	30	156	180	79	55	16	...	...	...	31	28	1	...
	Pupils having Defects		...	40·0	34·6	31·1	31·6	52·7	43·7	...	...	...	22·6	25·0	...	...
Mental Condition.	Dull and Backward	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Feeble-minded	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Imbeciles	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Idiots	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Malnutrition	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uncleanliness.	Head	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Body	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	0·6	...	...	...	...	...	...	...	...	...	...

			Boys.							*Girls.*						
			Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19	Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19
Skin.	Ring-worm. Head	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Ring-worm. Body	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Scabies	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Impetigo	T	...	...	...	0·6	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Diseases	T	...	...	1·3	1·1	...	...	...	...	...	...	...	3·6	...	...
	(Non-Tubercular)	O	...	...	...	0·6	...	5·5	12·5	...	...	...	6·5	...	...	...
Eye Diseases.	Defective Vision	SP	...	3·3	6·4	5·6	5·1	3·8	12·5	...	...	...	9·7	3·6	...	...
		O	...	13·3	5·8	4·4	6·3	10·9	...	...	...	...	...	3·6	...	...
	Squint	T	...	...	2·6	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	0·6	...	1·8	...	...	...	...	...	...	...	...
	Conjunctivitis	T	...	...	...	0·6	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	1·8	...	...	...	...	...	...	...	...
	Blepharitis	T	...	3·3	0·6	0·5	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Keratitis	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Corneal Opacities	T	...	...	...	...	...	...	...	...	...	...	...	7·1	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Corneal Ulcer	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ear Diseases.	Defective Hearing	T	...	...	...	0·6	...	...	...	...	...	...	...	...	...	...
		O	...	...	1·3	0·6	...	...	6·3	...	...	...	...	...	...	...
	Otitis Media	T	...	...	1·3	0·6	...	1·8	6·3	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Ear Diseases	T	...	...	1·3	0·6	...	...	...	...	...	...	...	...	...	...
		O	...	...	1·3	...	...	...	...	...	...	...	...	...	...	...
Nose and Throat.	Enlarged Tonsils	T	...	...	1·3	1·7	...	1·8	...	...	...	...	...	...	...	...
		O	...	...	3·8	3·9	1·3	3·6	...	...	...	...	...	...	...	...
	Adenoids	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Enlarged Tonsils and Adenoids	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	1·3	...	...	...	...	...	...	...	...	...
	Enlarged Cervical Glands	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	(Non-Tubercular)	O	...	...	3·8	1·7	1·3	3 6	...	...	...	...	...	...	...	...
	Defective Speech	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	0·6	...	1·3	...	...	...	...	...	...	...	...	...
Teeth.	Four or more Carious	T	...	...	3·8	2·2	5·1	10·9	6·3	...	...	...	3·2	7·1	...	...
		O	...	...	...	2·8	1·3	...	...	...	...	...	...	3·6	...	...
	Sepsis	T	...	3·3	1·3	0·6	1·3	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Heart and Circulation.	Organic	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	0·6	...	...	...	...	...	...	...	...	...	...	...
	Functional	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	10·0	3·2	2·8	2·5	1·8	...	...	...	...	...	...	...	...
	Anæmia	T	...	...	0·6	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lungs.	Bronchitis	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	3·3	...	1·7	...	7·3	6·3	...	...	...	3·2	...	...	...
	Other Non-Tubercular Diseases	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	0·6	...	...	1·8	...	...	...	...	...	...	...	...
Tuberculosis.	Pul-monary. Definite	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Pul-monary. Suspected	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Non-Pulmonary. Glands	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	0·6	...	...	...	...	...	...	...	...	...	...	...
	Non-Pulmonary. Spine	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Non-Pulmonary. Hip	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Non-Pulmonary. Other Bones and	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Joints	O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Non-Pulmonary. Skin	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...

			Boys.							Girls.						
			Ages 8-11	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19	Ages 8-11.	Age 12.	Age 13.	Age 14.	Age 15.	Age 16.	Ages 17-19
Nervous System.	Epilepsy	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chorea	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Infantile Paralysis	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rickets	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deformities.	Spinal Curvature	T	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		O	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Forms	T	...	3·3	2·6	1·7	...	...	...	...	...	...	...	...	...	...
		O	...	6·7	1·9	1·7	...	...	...	...	...	...	...	...	...	...
	Other Diseases or Defects	T	...	3·3	...	1·7	...	...	...	...	...	...	3·2	...	...	...
		O	...	3·3	0·6	1·7	2·5	10·9	...	...	...	...	...	...	...	...

The following table gives a summary of the visual acuity as determined by the Snellen Test Types :—

TECHNICAL AND CONTINUATION SCHOOLS.

Boys

Age last Birthday.	Number Examined.	6		9		12		18		24		36		60		0	
		R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L	R.	L
8 9 10 11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	30	86·7	86·7	3·3	3·3	6·7	6·7	3·3	3·3	...	...	...	...	...	...	...	...
13	156	71·8	75·6	11·5	10·2	6·4	3·2	2·6	3·2	5·1	1·3	0·6	0·6	1·9	5·8	...	...
14	180	76·1	75·5	16·1	12·7	2·8	3·9	2·2	2·2	0·5	1·1	0·5	2·2	0·5	2·2	1·1	...
15	79	82·3	77·2	2·5	8·9	2·5	3·8	6·3	3·8	2·5	3·8	2·5	1·3	1·3	...	...	1·3
16	55	72·7	80·0	10·9	7·3	1·8	...	5·4	1·8	3·6	1·8	1·8	3·6	1·8	5·4	1·8	...
17 18 19	16	75·0	87·5	...	...	12·5	6·2	6·2	...	...	...	6·2	...	...	...	...	6·2

Girls.

Age last Birthday.	Number Examined.	6		9		12		18		24		36		60		0	
		R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.	R.	L.
8 9 10 11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14	31	80·7	83·9	12·9	3·2	...	9·7	3·2	3·2	...	...	...	...	...	...	3·2	...
15	28	78·6	82·1	14·3	3·6	...	3·6	...	...	3·6	...	3·6	3·6	...	3·6	...	3·6
16	1	100·0	100·0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17 18 19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TREATMENT OF SECONDARY SCHOOL CHILDREN.

It has been our experience that, in the majority of cases, parents readily provide the treatment required from private sources. There are, however, some instances where the parents are known to be too poor to provide treatment, and, for such cases, the Committee's Clinics have been made available for any treatment required. These Clinics are not always easily accessible owing to the circumstances of the Secondary

Schools being sometimes in the area of a Part III. Authority, and, therefore, the Committee has sanctioned the arrangement of treatment at the Clinics of Part III. Authorities on a basis of payment per case or per attendance. Up to the present such arrangements have been made with Ashton-under-Lyne, Darwen, Morecambe and Stretford, and it is anticipated that further arrangements will be made in due course with other Authorities as opportunity permits.

With respect to payment for treatment, the same procedure is followed as for elementary cases. For operations or for in-patient treatment under the Cripple Scheme the parents are assessed according to income, but no case is refused treatment of any kind on account of poverty.

The following tables show in summary form the amount, kind, and results of the treatment obtained during the year.

The first set of tables gives this information in regard to those pupils who were examined at the previous medical inspection (" new cases ") :—

SECONDARY SCHOOLS.

TREATMENT OF DEFECTS.

NEW CASES.

Boys.

Disease or Defect.	Number of Pupils.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	1	...	1	1	1	...	...	...	...
Impetigo	2	...	2	2	2	...	...	...	...
Other Skin Disease ...	14	1	9	10	8	1	1	...	4
Ear Disease	39	1	26	27	10	10	7	8	4
Eye Disease (external and other)	12	...	9	9	9	...	...	1	2
Dental Disease	294	6	145	151	99	51	1	102	41
Other Diseases	86	17	56	73	34	36	3	11	2

Girls.

Disease or Defect.	Number of Pupils.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	1	...	1	1	1	...	...	...	...
Scabies	1	...	1	1	1	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	47	...	36	36	22	13	1	2	9
Ear Disease	55	...	43	43	18	18	7	2	10
Eye Disease (external and other)	3	...	3	3	2	1	...	...	...
Dental Disease	500	16	289	305	131	164	10	88	107
Other Diseases	190	2	137	139	68	60	11	15	36

Treatment of Visual Defect.

	Number of Pupils.														
	Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Refracted.	No Information.
		Under Authority's Scheme—Clinic, or Hospital.	By Private Practitioner or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital or otherwise.		Treatment other than by Glasses.		For whom no treatment was considered necessary.		
						Glasses Prescribed	Glasses Obtained.	Glasses Prescribed	Glasses Obtained	Recommended.	Received.			
Boys	283	62	98	54	214	61	61	146	146	2	2	5	32	37
Girls	503	119	143	147	409	104	104	287	285	4	4	14	28	66

Treatment of Defects of Nose and Throat.

	Number of Pupils.						
	Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Untreated.	No Information
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
Boys	38	1	12	13	5	17	3
Girls	95	3	20	23	37	28	7

TECHNICAL AND CONTINUATION SCHOOLS.

Treatment of Defects.

New Cases.

Boys.

Disease or Defect.	Number of Pupils.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	1	...	...	...	...	...	...	...	1
Ear Disease	4	1	2	3	2	1	...	...	1
Eye Disease (external and other)	2	...	1	1	1	...	...	...	1
Dental Disease	31	1	8	9	5	4	...	8	14
Other Diseases	11	4	2	6	2	4	...	2	3

Girls.

DISEASE OR DEFECT.	NUMBER OF PUPILS.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	1	...	1	1	1	...	...	...	...
Other Skin Diseases ...	2	...	...	...	...	...	...	...	2
Ear Disease	1	...	...	...	...	...	...	...	1
Eye Disease (external and other)	...	...	...	...	...	...	...	...	...
Dental Disease	8	...	...	...	...	...	...	...	8
Other Diseases	4	...	1	1	1	...	...	...	3

TREATMENT OF VISUAL DEFECT.

	NUMBER OF PUPILS.													
	Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Refracted.	No information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner, or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital, or otherwise.		Treatment other than by Glasses.		For whom no treatment was considered necessary.		
						Glasses Prescribed	Glasses Obtained	Glasses Prescribed	Glasses Obtained.	Recommended.	Received.			
Boys	27	9	2	...	11	9	9	2	2	...	...	...	7	9
Girls	4	...	...	...	...	...	...	...	...	...	...	...	...	4

TREATMENT OF DEFECTS OF NOSE AND THROAT.

	NUMBER OF PUPILS.						
	Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Untreated.	No information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
Boys	...	...	...	...	...	...	...
Girls	3	2	...	2	...	...	1

The following set of tables gives similar information in regard to those pupils who were recommended to obtain treatment at some inspection prior to the last ("old cases") :—

SECONDARY SCHOOLS.

Treatment of Defects.

Old Cases.

Boys.

Disease or Defect.	Number of Pupils.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	1	...	1	1	1	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	7	...	3	3	1	1	1	1	3
Ear Disease	3	...	1	1	...	1	...	1	1
Eye Disease (external and other)	...	...	...	...	...	...	...	...	...
Dental Disease	39	2	17	19	14	5	...	13	7
Other Diseases	11	3	5	8	5	3	...	3	...

Girls.

Disease or Defect.	Number of Pupils.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	...	...	...	...	...	...	...	...	...
Ear Disease	4	...	3	3	...	2	1	1	...
Eye Disease (external and other)	...	...	...	...	...	...	...	...	...
Dental Disease	23	2	10	12	5	6	1	4	7
Other Diseases	6	1	2	3	1	2	...	1	2

TREATMENT OF VISUAL DEFECTS.

	NUMBER OF PUPILS.													
	Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Re-fracted.	No Information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital, or otherwise.		Treatment other than by Glasses.		For whom no treatment was considered necessary.		
						Glasses Prescribed	Glasses Obtained.	Glasses Prescribed	Glasses Obtained	Recommended.	Received.			
Boys	36	6	13	7	26	6	6	18	18	1	1	1	8	2
Girls	12	2	6	2	10	1	1	8	8	...	...	1	1	1

TREATMENT OF DEFECTS OF NOSE AND THROAT.

	NUMBER OF PUPILS.						
	Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Un-treated.	No Information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
Boys	25	...	8	8	...	15	2
Girls	13	2	3	5	2	3	3

TECHNICAL AND CONTINUATION SCHOOLS.

TREATMENT OF DEFECTS.

OLD CASES.

Boys.

DISEASE OR DEFECT.	NUMBER OF PUPILS.								
	Referred for Treatment.	Treated.			Result.			Un-treated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	1	...	...	...	...	...	...	1	...
Ear Disease	...	...	...	...	...	...	...	...	...
Eye Disease (external and other)	...	...	...	...	...	...	...	...	...
Dental Disease	1	...	...	...	...	...	...	...	1
Other Diseases	1	...	...	...	...	...	...	...	1

Girls.

DISEASE OR DEFECT.	NUMBER OF PUPILS.								
	Referred for Treatment.	Treated.			Result.			Untreated.	No Information.
		Under Authority's Scheme.	Otherwise.	Total.	Cured.	Improved.	Unchanged		
Minor Ailments (Skin)—									
Ringworm—Scalp ...	...	...	...	...	...	...	...	...	...
Ringworm—Body ...	...	...	...	...	...	...	...	...	...
Scabies	...	...	...	...	...	...	...	...	...
Impetigo	...	...	...	...	...	...	...	...	...
Other Skin Disease ...	...	...	...	...	...	...	...	...	...
Ear Disease	...	...	...	...	...	...	...	...	...
Eye Disease (external and other)	...	...	...	...	...	...	...	...	...
Dental Disease	...	...	...	...	...	...	...	...	...
Other Diseases	...	...	...	...	...	...	...	...	...

TREATMENT OF VISUAL DEFECT.

	NUMBER OF PUPILS.													
	Referred for Refraction.	Submitted to Refraction.				Result of Refraction.							Not Refracted.	No information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Otherwise.	Total.	Under Authority's Scheme—Clinic or Hospital		By Private Practitioner, Hospital, or otherwise.		Treatment other than by Glasses.		For whom no treatment was considered necessary.		
						Glasses Prescribed	Glasses Obtained.	Glasses Prescribed	Glasses Obtained	Recommended.	Received.			
Boys	3	...	...	...	...	...	...	...	...	...	...	...	...	3
Girls	...	...	...	...	...	...	...	...	...	...	...	...	...	...

TREATMENT OF DEFECTS OF NOSE AND THROAT.

	NUMBER OF PUPILS.						
	Referred for Treatment.	Received Operative Treatment.			Received other forms of Treatment.	Untreated.	No Information.
		Under Authority's Scheme—Clinic or Hospital.	By Private Practitioner or Hospital.	Total.			
Boys	...	...	...	...	...	...	...
Girls	...	...	...	...	...	...	...

MISCELLANEOUS.

Special attention is directed to the examination of Bursars in Secondary Schools. During the past year 275 Bursars and 333 candidates for Bursaries were medically examined.

Lectures, in many cases arranged in conjunction with Miss Tipper, the organizing lecturer employed by the Public Health Department, have been given to parents, mothers, members of Women's Institutes, Mothers' Unions, &c., during the year.

Lectures, illustrated by suitable films and lantern slides, have been given in many of the districts by members of the School Medical and Dental Staff, and Miss Tipper, to large numbers of children on such subjects as Personal Hygiene, Cleanliness, Care of the Teeth, &c.

Various courses of lectures to Midwives have been given by members of the Medical Staff.

SPECIAL INQUIRIES.

Dr. S. C. Gawne contributes the following article on the relationship between Adenoids and Backwardness as measured by the usual tests for intelligence :—

ADENOIDS AND BACKWARDNESS.

This investigation was undertaken in order to determine whether there exists any relationship between adenoids and backwardness as measured by the usual tests for intelligence.

The dull and backward child constitutes a problem of prime importance for the School Medical Officer and School Teacher. Too often the presence of such children results in a clogging of the normal working and progress of the class as a whole.

In the course of his duties the School Medical Inspector is repeatedly confronted with cases referred by the teachers as "slow, dull and suffering from mouth breathing."

Adenoids and educational retardation have long been regarded as associated conditions, but no actual tests appear to have been carried out with a view to ascertaining whether a lowered Intelligence Ratio exists in these cases, and our knowledge in this respect is largely the result of casual observations.

The incidence of adenoids and the allied condition of enlarged tonsils at Routine School Medical Inspection in England and Wales amounts to some 66·8 per 1,000 children examined, and this high incidence indicates the importance of these defects in the health of the school child.

The effects of adenoids are widespread and there is probably no condition which produces such evident physical signs. The respiratory system, in particular, suffers. Obstructed respiration results in defective posture, lack of sleep and a pale, irritable child.

Such general ill-health might be expected to conduce to mental dullness. Nevertheless there appears to be a more direct relationship between adenoids and dullness.

The general appearance of the adenoid child, its vacant expression and open mouth, give the observer the impression of an underlying stupidity and mental lethargy. Such children are generally educationally retarded. This may be due in part to the deafness which so frequently accompanies the adenoid state.

The association between adenoids and deafness and the influence of the latter as a retarding factor in the education of the school child has been emphasised by A. J. Rojas who gives his experience amongst Argentine school children.

Guye, of Amsterdam, was the first to refer to the condition termed "aprosexia" and found in association with adenoids. In this condition periods of mental lethargy occur, alternating with periods of normality and brightness.

It would be of interest to determine whether there exists in these cases any lowering of the intelligence as distinct from educational retardation, for the former is a prime cause of the latter.

The determination of the part played by individual factors in the causation of mental defect is a matter of great difficulty, but of importance, particularly with regard to the possibility of an improved intelligence ratio resulting from operative treatment for adenoids.

The tests used in this investigation were the Stanford Revision of the Binet-Simon tests for intelligence as used by Terman. These tests involve all kinds of mental activity, including perception, memory, judgment, imagination and reasoning, sometimes singly and often in combination. The result obtained by pooling these tests is to a large extent independent of any specific factor such as would be incurred by the testing of a single capacity.

Great interest has been centred on intelligence tests and there has been so much speculation as to their relative values that it would be superfluous to enter into any detailed discussion on their merits here. They have been subjected to severe criticism, in that their results reflect the effects of schooling rather than native capacity, and that children living in an abnormal environment will be handicapped ; but it may be said that these criticisms have been met. The tests call for natural ability rather than acquired knowledge or skill, and correlation shows that the Binet-Simon tests give a result which agrees to a remarkable extent with independent estimates of intelligence.

While it is recognised that intelligence tests do not offer an exact measurement of intelligence, they do form a useful guide to the measurement of inborn general efficiency of individuals.

For the purpose of this investigation a comparison was made between the Intelligence Ratio of children suffering from adenoids and that of a control group of normal children. The children forming the two groups were drawn from the same environment and conditions so that they represented similar social and racial characteristics. The children were those of coal miners.

Irregular attendance at school has a doubtful influence on the intelligence ratio and Sheppard Dawson states "even fairly lengthy absences from school appear to have had little appreciable effect." Nevertheless, for the purpose of this investigation only regular attenders were submitted for examination. So far as possible children suffering from any gross defect in addition to adenoids and enlarged tonsils were excluded from the test.

The test material was limited to a definite age group, it being decided that children between the ages of eight and nine years were most suitable, since not only were these children the ones who would normally come up for routine inspection in school as "Intermediates," but also they were not too far advanced educationally and yet were familiar with teachers and Medical Inspectors. Moreover, the Stanford Revision tests are particularly well suited for the testing of children between the ages of eight and nine years. The average age of the children tested was, therefore, 8·5 years.

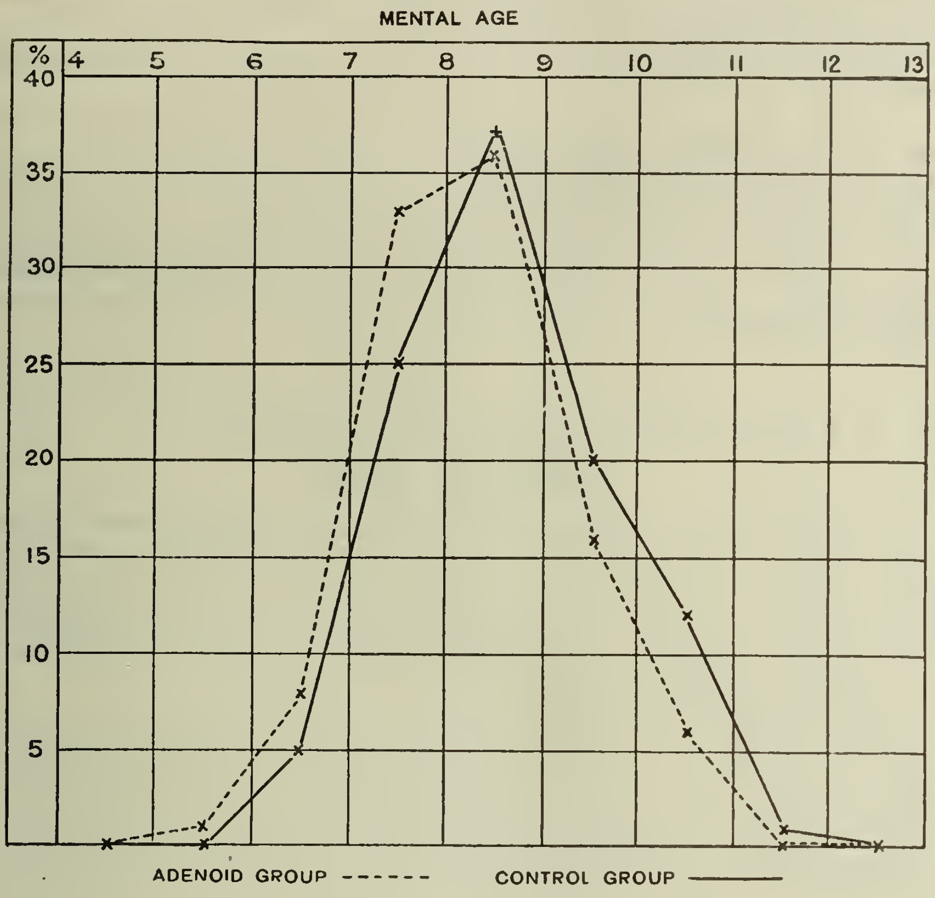
The time involved in examining children for the purposes of these tests is considerable, but during the course of the last two years, two hundred children have been examined comprising one hundred children suffering from adenoids and a control group of one hundred healthy children selected at random from the school register.

Procedure.—During the course of the Routine School Medical Inspection, a list was prepared of those children found to be suffering from adenoids and from this list children were selected for special examination for the purpose of estimating their intelligence. Each child examined was questioned in a room set apart. After a few preliminary remarks to allow the child to grow familiar with its surroundings and to become at ease, the standard tests were presented, beginning at the seven year old tests or lower if necessary, and continuing right up the scale to the limit of the child's capacity. By this means the child's mental age was estimated. The mental age corresponds with the level of intellectual development. In order to measure the "inborn capacity" of a child one must consider the mental age in relation to the chronological age and this measurement is expressed by the ratio M.A./C.A. This ratio is known as the Intelligence Ratio and is usually given as a percentage by multiplying by 100. The normal child gives an Intelligence Ratio of 100 per cent.

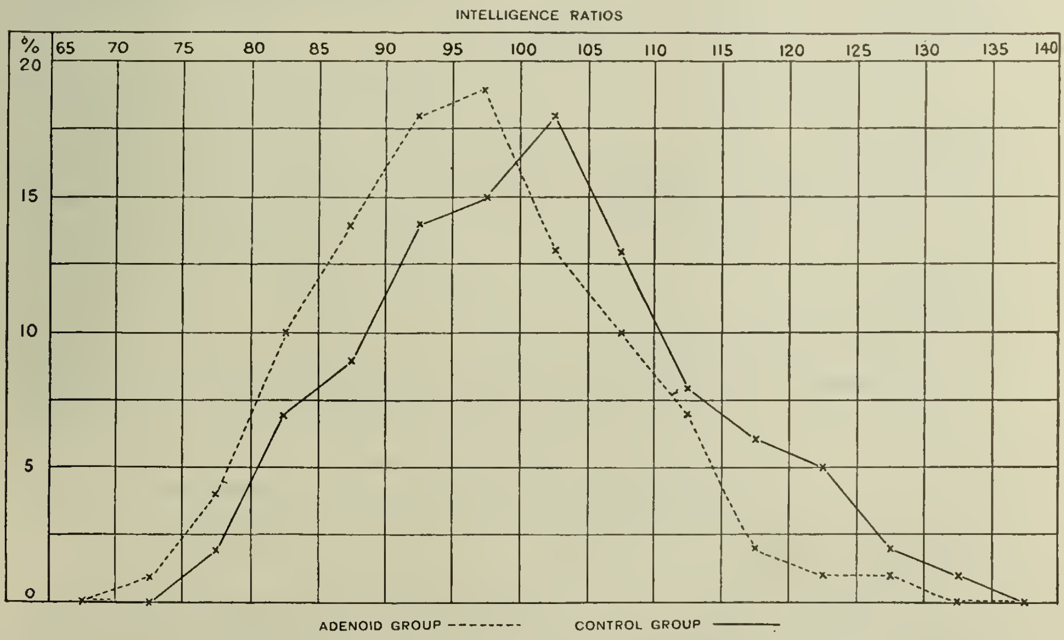
In the following Graphs are given the Intelligence Ratios of the children examined and the distribution of these ratios is indicated.

No differentiation has been made between boys and girls for according to Terman "The superiority of girls over boys is so slight . . . that for practical purposes it would seem negligible."

Graph showing the distribution of the children in terms of Mental Age.



Graph showing the distribution of Intelligence in terms of Intelligence Ratio in the two groups of children.



Summary and Conclusions.

1.—Adenoids and the associated condition of enlarged tonsils occur in some 6·7 per cent of English school children.

2.—There is a general opinion that adenoids are associated with educational retardation.

3.—The relationship between adenoids and backwardness as measured by the usual tests for intelligence has not hitherto been determined.

4.—According to the results obtained by application of the Binet-Simon tests, children with adenoids show a definite degree of backwardness.

5.—Although it is not known if, or to what extent, removal of adenoids leads to an improvement in the Intelligence Ratio, it would be reasonable to expect such improvement. By this means the capacity of the child for receiving education might be increased.

Dr. J. H. Porter submits the following interesting paper on :—

CONGENITAL DEFECT.

The reproduction of species similar not only in general configuration, but even in small details is one of the most wonderful facts of nature, and nothing brings home this fact more forcibly than the occasional abnormality. Much research work has been done on the physiology of the embryo, but there is still much ground to be covered before we shall be in a position to prevent rather than to correct. It remains worth our while to take every opportunity to study cases of congenital deformity clinically and sociologically.

Child Welfare work has seen a reduction in Infantile Mortality to within measurable distance of the absolute minimum to which such effort can possibly be expected to attain. For the quinquennium 1881–5 the number of deaths of infants under three months old per 1,000 births registered was 67. The number of deaths from 3 to 12 months was 72 per 1,000 births. For the quinquennium 1926–30 the corresponding figures were 43 and 26. As can be seen from these figures the number of deaths of infants under three months has not declined nearly to the same extent as the number of deaths of infants from 3 to 12 months. In many, if not most cases, the majority of deaths of infants under three months are due to ante-natal factors. Some of these are directly due to recognised physical conditions in the mother, and are, therefore, definitely preventible. Others are due to mal-development of the embryo, resulting in anatomical or physiological abnormality. Yet other abnormalities while not incompatible with life, remain to cripple the child, to render him a source of anxiety to his parents, a cost to the State, and possibly a potential factor in the production of yet further deformity. The problem of congenital defect is of real interest to the worker in Public Health fields.

According to Birnbaum and Blacker (1), a malformation "is a condition which may be attributed to more or less important deviations from the normal course of intra-uterine development." They are of the opinion that all malformations originate in the first three months of embryonic life. Blacker considers that they originate in the first six weeks. According to the generally accepted rate of development of the embryo a large majority must have been produced by the sixth or seventh week, while in the light of recent research, as will be seen later, it seems highly probable that abnormality or normality is determined very early indeed in the life of the embryo.

Perhaps the most complete classification of the theories of causation of congenital defect is found in Ballantyne (2).

He divides the theories into two main groups—the old theories and the modern. The old theories he divides into the Supernatural, the Natural and the Mental. Little need be said of these except with regard to the last, which has often been put forward as the cause of abnormality under the heading of Maternal Impression. While it is certain that maternal impressions *per se* can have no effect in reproducing a similar abnormality, nevertheless, anxiety states might have an effect on development, either by affecting the nutrition of the embryo, or by disturbing the balance of internal secretions.

Ballantyne's modern theories are the pressure theory, external, intra-abdominal and intra-uterine—the pathological, diseases of the fœtus and affections of the amnion—and the embryological, arrest or excess of development separately, or combined, and a germinal factor.

Birnbaum and Blacker in their work previously mentioned, consider that the principal causes are, inheritance, concussions and blows, long continued pressure and disturbances of nutrition, oxygen supply and the presence of poisons and toxins in the maternal blood. They are of the opinion that oligohydramnios is important in the causation of such conditions as clubfoot, or congenital dislocations, but point out that such are fœtal accidents rather than abnormalities.

During the early years of this century amniotic bands were the most popular choice as the ultimate cause of most congenital defects. Ballantyne held this view strongly. While such factors might be responsible for some of the more serious deformities such as anencephaly, exomphalos, or sympodia, it is difficult to imagine how they could produce such conditions as absence of an eyeball, or absence of one radius.

Two of the earliest workers in the field of experimental embryology were Dareste and Fere. The latter is quoted by Ballantyne. He experimented by treating eggs in various ways, such as by painting the shells, by placing in atmospheres of varying kinds, by injecting poisons such as the alcohols, drugs and toxins into the albumen. His most noticeable results appear to have been produced with the alcohols. The proportion of monstrous chicks obtained was approximately double when ethyl alcohol was injected, and almost seven times when propyl alcohol was used. Since then a number of workers have expanded and varied these experiments in many ways. One of the earlier of these reports is that of W. H. Lewis (3), on the development of the eye in amphibia. His experiments show :—

(1) That no lens arises if the optic vesicle is prevented from coming into contact with the skin.

(2) That any area of skin, if stimulated by the optic vesicle can produce a lens, and further, that the optic vesicle of one species will produce a lens from the ectoderm of another species if allowed to come into contact, and lastly

(3) That any portion of the optic vesicle will produce lens formation. He, therefore, concludes that embryonic differentiation is not brought about by qualitative nuclear division, but that many other organs may be produced by correct interaction or stimulus. Whether this is so appears to be doubtful, but there can be no doubt from his experiments that so far as the development of the lens is concerned there is no specific area of skin, all that is required is stimulation by the optic vesicle. It might be said, however, that there must be a qualitative factor in the stimulus supplied by the optic vesicle.

Perhaps the most important series of all these experiments is that of C. R. Stockard (4).

He maintains that all types of monsters not of hereditary origin are simply developmental arrests ; further that—

(*a*) All types of monster may be caused by one and the same experimental treatment.

(*b*) Any one type of monster, *e.g.*, cyclops may be produced by a great number of experimental treatments.

(*c*) That all effective treatments tend primarily to lower the rate of development.

(*d*) That the type of monster induced depends upon the particular developmental moment or moments during which developmental rate was reduced.

He is further of the opinion that rate of development and length of time between cleavages is intimately connected with and dependent on processes of oxidation, and that cessation of development occurs more rapidly from absence of oxygen or variation in temperature than from any other natural modification of the environment. Stockard's experiments were carried out on the eggs of the common minnow—Fundulus Heteroclitus. He found that exposing the eggs to temperatures of 5°, 7° and 9°C. for from 1 to 5 days gave results as follows :—

At 5°C. development was almost completely stopped.

At 7°C. development was slowed to 1/20th of the normal rate.

At 9°C. it was slowed to 1/50th of the normal rate.

Inadequate oxygen supply also gave rise to a slowing in the rate of development.

The particular period at which development was stopped or retarded was also shown to be important, and Stockard distinguishes periods of indifference and periods of critical susceptibility. Slowing during periods of indifference can be done with little effect, but slowing at periods of critical susceptibility gives rise to high percentages of deaths and abnormal embryos. Periods of critical susceptibility are those during which important developmental steps are in progress such as the start of important organs, rapid proliferation or budding. Interruption at such times may cause serious injury to the particular part or parts at that moment beginning or rapidly growing. In one experiment fundulus heteroclitus eggs were divided into four groups. Immediately before the first cleavage stage three of these were put into temperatures of 5°, 7° and 9°C. ; the fourth group were kept as controls. Those at 5°C. were returned to room temperature after 48 hours; they were all in first, second or third cleavage stages. Those at 7° and 9°C. were returned after 72 hours ; those at 7°C. showed many irregular discs, and some regular 16–32 cell stages. Those at 9°C. showed some regular 128 cell stages. At this stage the control embryos were well formed. After 25 days all controls were hatched, and all were normal ; of those which had been subjected to low temperature, numbers were still unhatched, some had died, while all varieties of deformity were found, anophthalmos bilateralis and unilateralis, microphthalmos, anomalies of body structure.

The mortality varied from 78—34 per cent. Similar experiments showed similar results when oxygen supply was diminished in place of the lowering of temperature. The earlier the arrest of development the more varied will be the defects found, because as each part or organ passes its critical stage it becomes more hardened to variations of temperature or oxygen supply.

These experiments show further that the question of congenital deformity is linked with that of intra-uterine death. In this connection, Mall (5) has shown statistically that out of every 100 pregnancies 80 end in the birth of normal individuals 7 are aborted as pathological ova, about 1 produces a monster at term, while 12 are aborted as "apparently" normal foetuses or embryos. Mall considers that many of these would show defects if examined more carefully and if the normal for any given stage were more precisely defined. Thus there is definite evidence that not only can the same cause produce all variety of congenital defect, but that it can also at the same time be held responsible for an even greater number of intra-uterine deaths.

A further important point raised by Stockard has reference to double individuals. In his experiments with fundulus heteroclitus he obtained a series of double fish ranging from two components equal in size to specimens with one component normal in size, and the other very small and showing an extreme degree of deformity. He found that when the two components were equal in size they were normal, but that when they were unequal the larger component was always normal, while the smaller was always more or less deformed. He concludes that no theory of the production of deformity can be held unless it explains such cases as these. He suggests that the one component develops a lower rate of metabolism or oxidation than the other, and that thereby its rate of development is lowered and deformity results.

The experiments then show that in fishes faulty development may be due to cold, lack of oxygen, or drying. In the mammal cold and drying cannot operate and we are left therefore with the third alternative lack of oxygen which in turn Stockard maintains is due to delayed or faulty implantation.

Mall (6) is very definite on this point of faulty implantation. He is of the opinion that all monsters are produced by external influences acting on the ovum, that the primary factor is alteration in the nutrition of the embryo due to faulty implantation which in turn is due to an abnormal condition of the uterine mucosa. He is insistent that the environment of the egg is of the utmost importance.

Further experimental work in this connection is that of Evans and Bishop (7). Rats were reared on a " Basic Ration" of casein, cornstarch, lard, milk fat, salts, and daily ration of dried whole yeast. Growth was normal, but the animals were incapable of reproducing. Cod liver oil, orange juice and milk added to the diet had no effect in relieving the condition. On the other hand, the addition of fresh greens, cereals or meat to the diet immediately relieved the conditions. The animals showed normal oestrus and ovulation and could conceive ; implantation occurred, but the placentæ were abnormal and the products of conception were generally absorbed. The conclusion is that the factor responsible is dietary and allied to the known vitamines.

W. B. Kirkham (8) has produced experimental evidence of delayed implantation in mice. Comparing suckling and non-suckling mice he found that the progress of the fertilized ovum in each was the same up to the 6th day being in the two-cell stage on the 2nd or 3rd day; in the morula stage on the 4th or 5th day, and lying free in the uterine cavity as a blastula on the 6th day. At this point, however, the two series diverge. In non-suckling mice the blastulas become implanted in the uterus at the end of the 6th day. In suckling mice they lie free in the uterine cavity from the 6th–14th day, and on section of such uteri the adjacent cells of the uterine mucosa show no sign of any re-action.

At the end of this period in some cases the blastulas became implanted and pregnancy continued. About one in five thus progressed to a complete pregnancy, the gestation period being lengthened by the time spent lying free in the uterine cavity. Of the others in the majority there was a failure of ovulation, while in the minority the fertilized eggs died shortly after the implantation and were absorbed.

The corpus luteum in mice can therefore, apparently inhibit ovulation, or if ovulation and fertilization have taken place, can inhibit the normal reaction of the uterine mucosa. Effects due to endocrine glands are largely the result of the balance of the different secretions, and it is at least possible that lack of balance might occur of such a quality as to prevent the reaction of the mucous membrane even in the absence of a corpus luteum of pregnancy. It is known that worry and anxiety are linked with dysfunction of various endocrine glands.

J. F. McClendin (9), following on some of the earlier work of Stockard's, attempted the production of deformities by subjecting the fertilized eggs to the action of inorganic salts, chiefly the chlorides of sodium, potassium, magnesium and calcium. He also used the various alcohols. Using the eggs of Fundulus Heteroclitus in the two cell stage, he kept them in the various solutions until the eyes appeared. He obtained cyclops frequently by these means, and anophthalmos unilateralis rarely.

E. I. Werber (10) disagrees with Mall in the view that the ovum is always normal, and that monstrosity is always due to environmental factors acting subsequently on the fertilized ovum. He considered that toxic substances in the blood might have an effect on the germ cell or the fertilized ovum and carried out experiments to attempt to show this. Again the eggs of Fundulus Heteroclitus were chosen, and they were subjected to the action of various solutions in early cleavage stages varying from 1–2 to 8–16. The substances used were such as urea, butyric acid, lactic acid, acetone, etc.

The eggs were left in the solution from 15 to 20 hours. In the case of butyric acid and acetone definite results were obtained, a large number of the resulting embryos being monstrous. Amongst the deformities found were large numbers of cyclopean embryos of all grades ; whilst anophthalmos bilateralis and unilateralis and microphthalmos were also frequently seen. Deformed bodies were found in great numbers as were also eggs in which a part only of the body had developed. In some only a small portion of the nervous system with a single eye represented the embryo. This appears to weigh very definitely against the view of the interdependence of organs in development and in favour of the view of development by qualitative nuclear division.

Further evidence of early differentiation is shown by the experiments of W. M. Baldwin (11), who produced monstrous development by the action of X-rays upon fertilized frogs' eggs in the 2 cell stage. The resulting tadpoles showed "inequality of development," due to "a temporary suspension of differentiation followed by a lengthened tempo in the developmental rate of the affected cells." He maintains "that the nature of the change, whether physical or chemical, is of less importance from the embryological standpoint than is the demonstration of symmetrical distribution of the (organ forming) substances at so early a developmental stage."

The most recent work found on this subject is that of Leigh Hoadley (12), on "The Developmental Potencies of parts of the Early Blastoderm of the Chick." This work was with special reference to the eye, the epidermis and the nephros. The work on the eye only will be considered here. The experiments which were conducted on chick embryos show that there is localisation of the eye to a certain degree in blastulas of four hours incubation. The eye obtained showed only pigmented cells. With a blastula of six hours incubation pigmented and non-pigmented cells were found, while with one of eight hours incubation the retina could be distinguished.

Hoadley has designated the localisation of organs at this early stage preprimordial segregation and the actual parts preprimordial segregates. Outwardly there is no difference between the eye region in the blastoderm of four hours incubation, and in that of six or eight hours incubation ; actually, however, as these experiments show, there must be a physiological difference. The changes which take place in the cells antedate by a considerable period the visible results. When, however, a certain part is isolated from the rest of the organism differentiation proceeds up to the point previously determined by the physiological changes. After that, cell division is merely quantitative as opposed to qualitative.

From the accumulation of experimental evidence it seems clear that :—

(1) The type of deformity depends on the particular moment or moments during which the injurious factor works. The deformity varies with the location and degree of the injury.

(2) This factor may be of several kinds—lack of oxygen, toxins, poisons or a hereditary difference in the germ protoplasm.

(3) It may act at any point from the commencement of the germ cell to a certain period in the formation of the particular organ or part beyond which anomalies cannot be produced.

(4) The ultimate causation is almost certainly a biochemical factor in every case.

This experimental work has been performed principally on the eggs of amphibia and birds, and there must, therefore, be some doubt as to whether the conclusions are applicable to the human ovum. There does not appear to be any serious reason for rejecting the conclusions in general as being in-applicable. At the same time the determination of corresponding periods appears a difficult matter ; that is, stages of the human ovum corresponding to the various stages of the ova of birds and amphibia. Such a determination is necessary if the role which faulty implantation is said to play is to be verified.

R. J. Bean, in a paper on the Ætiology of Embryonic Deformity (1926) classifies the causes as due to :—

(1) Defective fertilization.

(2) Defective maternal environment.

(3) Defective germ cells.

With regard to defective fertilization he states that there is an optimum point for fertilization in the life of the germ cells, and that fertilization of cells by cells which have passed this point is followed by retarded development and subsequent deformities. It would seem that, so far as man is concerned, were this a cause of deformity, cases should be much more frequent than they are. While there may be some control as to the time of fertilization of the ovum it is difficult to see how there can be any control of the spermatozoon, that is, any control so accurate as to ensure fertilization by a spermatozoon at its optimum point in development.

There can be no doubt that defective maternal environment is a causative factor in some cases, and this in turn is probably due often to an inflammatory condition of the uterine mucosa. In other cases the faulty implantation may be due to a lack of reaction of the uterine mucosa resulting from the inhibiting effect of hormones. In yet other cases it seems probable that the failure of correct placentation may be due to a failure to develop on the part of the ovum itself.

Defective germ cells also appear to be a cause. The cause of a hereditary deformity must be transmitted through one or other of the germ cells ; the potentiality to reproduce in a given abnormal way must be present in the germ cell. This being the case it appears possible that the potentialities of the ovum might be altered by forces acting during its production in the ovary. Ovarian disease does not appear to be considered much in accounts of causes of deformity but there seems no reason why it should not be given at least equal prominence with uterine disease.

A return must now be made to Ballantyne's theories of pressure and amniotic bands. While it is fairly certain that the majority of cases are not due to these causes there remain nevertheless a certain number and type of cases which could quite well be so caused. Intra-uterine amputations when they occur are most likely to be due to amniotic bands. Again, defects of the chest wall such as one to be described are probably due to pressure.

I consider, therefore, that we may sum up the causes of congenital deformity as follows :—

(1) Defects of the germ cell—hereditary or acquired.

(2) Defective placentation due to (*a*) General causes.
(*b*) Uterine inflammation.
(*c*) Defective germ cell.

(3) External factors—pressure bands.

Five cases of congenital deformity encountered in the course of School Medical and Child Welfare work will now be described.

CASE 1.—ANOPHTHALMOS UNILATERALIS.

F.T. Male. 3rd child.

Family History.—Mother and father both healthy. One sister is myopic. A stepbrother shows webbing of the 2nd and 3rd toes of each foot.

Ante-Natal History.—Nothing abnormal elicited.

History of Confinement.—Normal.

The baby was first seen when about four weeks old. It was perfectly normal except for absence of the right eye, complete so far as ordinary naked eye examination could determine. The orbit, lids, and lachrymal apparatus were apparently normal. The palpebral fissure was perhaps slightly smaller on the right than on the left, but only very slightly so. There was no trace of any cyst. The baby has attended regularly at the Child Welfare Centre, and its progress has been normal. It is now 20 months old, and is walking. The palpebral fissure is now definitely and considerably smaller on the right than on the left and the growth of the orbit as a whole is subnormal. There is, therefore, at the present time a certain amount of facial asymmetry which was not present when the child was first seen as an infant.

Riekman Godlee (14) 1883 recording a case of anophthalmos states that in 1875 Manz, of Freiburg, was aware of only six recorded cases of congenital absence of one eye.

J. K. Young (15) 1888, records that Anophthalmos Unilateris was first described by Klinkosch, a Bohemian surgeon in 1766.

The first detailed collection of these cases from the literature is apparently that of E. T. Collins (16), in whose article details are given of 30 cases of Anophthalmos Bilateralis and 12 cases of Unilateralis. To these 12 cases of Collins, Young (quoted above) adds 11 more. I have found in addition records of 13 cases of Bilateral and 10 cases of Unilateral (Refs. 23–27) though the search has been necessarily limited by several factors. A summary of the chief features of all these cases under the headings adopted by Collins follows.

Bilateral Anophthalmos.

COLLINS.—30 Cases.	PORTER.—13 Cases.
Age at reporting.—Birth to 15 years.	*Age at reporting.*—Birth to 30 years.
Sex.—7 males, 9 females. Fourteen not recorded.	*Sex.*—5 males, 5 females. 3 not recorded.
Family History.—Recorded in 13 cases. One instance of 3 cases in family. In one case father had Syphilis. Others healthy.	*Family History.*—Recorded in 10 cases. Nil. Abnormal.
Position in family where stated varies from 1st to 7th.	*Position in family* varies from 1st to 8th.
Other Deformities.— No note in four. None in 12. Deformities in 4. (*a*) No opening of nose externally ; palatal fissure ; skull deformed. (*b*) Double hare lip ; fissure of hard and soft palate ; 6 fingers on both hands. (*c*) Left hare lip ; right side of face broader than left ; nose slants to left. (*d*) Small lower jaw ; hand cramped fingers bent on carpus.	*Other Deformities.*— Definitely none in eight. Cleft palate and hare lip in one. Deformed skull in one. Spastic paraplegia 2. Single median nostril, 1.

Bilateral Anophthalmos—continued.

Collins.—30 Cases.	Porter.—13 Cases.
Mental and bodily development.— No note in 7. Normal in 17. Delicate, under-nourished, ill developed, moderately developed, emaciated, 6. Mentally below normal, 2. 10 died within 2 months of birth.	*Mental and bodily development.—* No note in 2. One died at 6 weeks. One died at 9 hours. 5 normal. 2 idiot. 1 very backward and liable to anger. 1 slow and unstable.
Eyelids. Adherent or palpebral fissure small in 20. Cyst-like swelling in lower lids in 4.	*Eyelids.* Noted as small palpebral fissure, 7. Cyst in lower lid, 3.
Orbit. In no case was even a rudimentary eyeball found. Normal, 1. Smaller, 5. Not recorded, 24.	*Orbit.* Small eye found in one case. In others no trace of eyeball found. Orbits shallow in one case. Pigmented tissue, representative of eye in one case.

Unilateral Anophthalmos.

Collins.—12.	Young.—12.	Porter.—10.
Age at reporting.— Ten days to 25 years.	Birth to 52 years.	Six days to 33 years.
Sex.— No note in 6. Males, 2. Females, 4.	No note in 8. Males, 2. Females, 2.	No note in 3. Males, 4. Females, 3.
Family History.— No note in 4. Healthy in 6. In one, father had monophthalmos on opposite side but his second child was normal. In one, elder sister had Ophthalmia Neonatorum.	Not recorded in any.	No note in 3. Healthy in 6 cases. One case. Step-brother webbed toes.
Other Deformities.— No note in 5. None in 6. Talipes Calcaneus right foot in 1.	Three monsters.	None in 7. No note in 1. Fissure of right side of nose in 1. Skull asymmetrical and lobe of auricle rudimentary in 1.
Mental and Bodily development. No note in 5. Healthy in 6. Puny and unable to cry, 1.		No note in 1. Poorly developed in 1. Normal, 8.
Eyelids.— No note in 4. Normal in 1. Normal but palp. fissure smaller in 7.	Palp. fissure smaller in 5. In 1 lids absent, and in 2 cysts in lower lid.	No note in 2. Normal in 3. Cyst of lower lid in 1. Normal but small palpebral fissure, 3. Entropion lids, 1.

Unilateral Anophthalmos—continued.

Collins.—12.	Young.—12.	Porter.—10.
Orbits and Contents.— Described as smaller in 3. Small cyst or nodule felt in 3. No trace of any eyeball:—	Orbits small in 2. Deformed in 1. One contained large cyst and 2 others remains of bulbs.	No note as to abnormality of orbit in any. Small nodule in 2. Very small eye, 2. Small strip of fibrous tissue in 1.
No eye on right in 6, of these: In 3 the left eye was normal. In one on the left, globe was collapsed. In one on the left there was Keratitis. In one, no note.		No eye on right in 6 cases. In 4 of these the left eye was normal. In one there was a coloboma of iris on the left. In one the left eye was undeveloped and blind, the cornea being absent.
No eye on left in 5; of these in 2 the right eye was normal. In one the right eye was small. In one Ophthalmia Neonatorum. In one case there was no note as to whether right or left, but the other eye had a large coloboma of iris and choroid. In one case the right eye was amblyopic and showed lateral nystagmus.	In 6 of 12 cases the other eye was micro-ophthalmic, one of which had a cyst size of walnut and one coloboma of iris and choroid.	No eye on left in 3 cases. In two of these the right eye was normal. In one the eye was undeveloped, the cornea being represented by a small dark spot through which light could be distinguished.

An analysis of these summaries shows that the sexes are almost equally liable. There does not appear to be anything significant in the family history and in most cases this was good. There appears to be no special predisposition to occur in first children or in the later children of a large family. There does appear to be a definite tendency to the concurrence of other defects.

Cases of anophthalmos may be classified as follows:—

(1) Cases in which in addition to the anophthalmos there is brain defect incompatible with life, or, if compatible with life, resulting in mental deficiency. These nearly always show bilateral anophthalmos, or, if not, the eye found on the one side is apparently always microphthalmic and useless.

(2) Cases in which cysts are found in the orbit.

(3) Cases of anophthalmos compatible with life and with normal mental and bodily development, generally unilateral.

These types of case can be well explained on Stockard's contention that the earlier the injury the greater the defect. In nine of the cases reported by Collins' *post mortem* examinations were performed and in no case was the optic nerve found to enter the orbit; in three the corpora quadrigemina were small or absent, and in one the optic thalami were said to be small. Of these 9 cases 4 died within 2 weeks of birth, 4 others died within 3 months. The 9th died 3 years after the time when first seen; she was then reported as a little girl and the note on mental development states that the "the mental faculties seemed very limited."

The 30 cases of Collins include 4 in group 2. Of the remaining 26 cases 10 died within 2 months of birth. According to Ballantyne, the optic vesicles may or may not have grown out at the beginning of the third week, but they are certainly developing at the end of the third week. In the fourth week they become the optic cups, and at the end of the fourth week the formation of the lens begins. About the end of the fifth week the invagination of the optic cup and its inferior surface takes place. Therefore, if there is to be a total lack of differentiation of cells to form an eye of any sort, the physiological change in the embryo must take place at a very early stage.

With regard to the second group, Mann (17) details two ways in which cyst formation may occur. In the first there is said to be a failure of invagination of the primary optic vesicle with the result that its cavity undergoes cystic degeneration giving rise to a congenital cystic eyeball. In the second invagination takes place, but there is an arrest of development before closure of the choroidal fissure; such an eye remains microphthalmic and shows a coloboma retinæ. Such eyes, according to Mann, tend to show irregular overgrowths of the layers of the optic cup which in time give rise to cysts behind and below the eye. This is definitely due to an injury at a later stage than the preceding group.

The third group presents a more difficult problem. If there is total absence of the eye the injury to the embryo must as, in the first group, occur at a very early stage. As we have seen, however, injury at this early stage would most likely give rise to a greater degree of deformity. It appears probable, therefore, that all cases of anophthalmos unilateralis are examples of an extreme degree of microphthalmos, or in other words that some degree of eye formation has taken place. The injury in such cases probably occurs, therefore, at a still later stage.

The cause appears to be a defect of the germ cell ; it is difficult to imagine how amniotic bands, adhesions or pressure could operate in producing the deformity while allowing normal development of the orbit and appendages.

Faulty implantation may be considered as a cause, but with this etiology one would expect either a greater extent of defect or death of the embryo.

CASE 2.—Male. 1st child.

Family history, nil. Mother healthy.

Ante-natal history, nil.

Confinement, normal.

At birth it was noticed that the right hand was small. He was first seen at the Child Welfare Centre at 2 months old, when it was noticed that the right hand was smaller than the left, and that there was partial webbing of the fingers. In addition, there was a defect of the chest wall on the right side, portions of the 4th, 5th and 6th ribs being absent. He made satisfactory progress for the first ten months of his life, after which time he ceased to attend. Unfortunately he died at about 15 months of "abdominal trouble," reported to be tubercular.

This does not appear to be a common deformity.

John Harold (18) (1898), describes a case of congenital deformity of the chest wall in which there was also imbecility and congenital cardiac disease. In this case the deformity was on the left side and was confined to all ribs below, but not including the fifth. The left half of the sternum and xiphisterum for a corresponding interval was also deficient. The patient died of Rheumatic Endocarditis. An interesting case similar in type, but of lesser degree of severity is reported by Raymond Johnson (19) (1903). In a boy, aged 6, the anterior axillary fold on the right was prolonged downwards, passing upwards from the inner side of the elbow to the chest at the level of the third costal cartilage. There was impairment of the whole upper extremity, the four inner digits were webbed and the pectoralis major was absent. A case of deformity of the thoracic skeleton on the right side is reported by T. H. C. Bennians and H. Emlyn Jones (20). The patient was a male child, aged 1 year and 2 months, when admitted to the London Hospital. He was the only child. There was no family history of deformity or disease, and there were no complications of pregnancy or labour. He died the day after admission, and the *post mortem* showed broncho-pneumonia, rickets and congenital malformations. All ribs 1 to 7 on the right side showed some deficiency. The authors state that from a consideration of similar conditions in the literature such deformities are common in males, and on the right side.

These cases could quite well be caused by pressure, and this seems a likely explanation. In the case above described the hand fitted easily into the deficiency in the chest wall and the whole deformity in the chest wall gave one the impression that the hand had either been bound tightly to the chest wall by a band or had been kept in the one position by pressure. The fact that most of the cases occur on the right side also points to a mechanical factor in causation. Strictly speaking, therefore, these cases should be classed as fœtal accidents rather than abnormalities.

CASE 3.—R.L. Male. Age 8 years and 10 months.

2nd child in family of four.

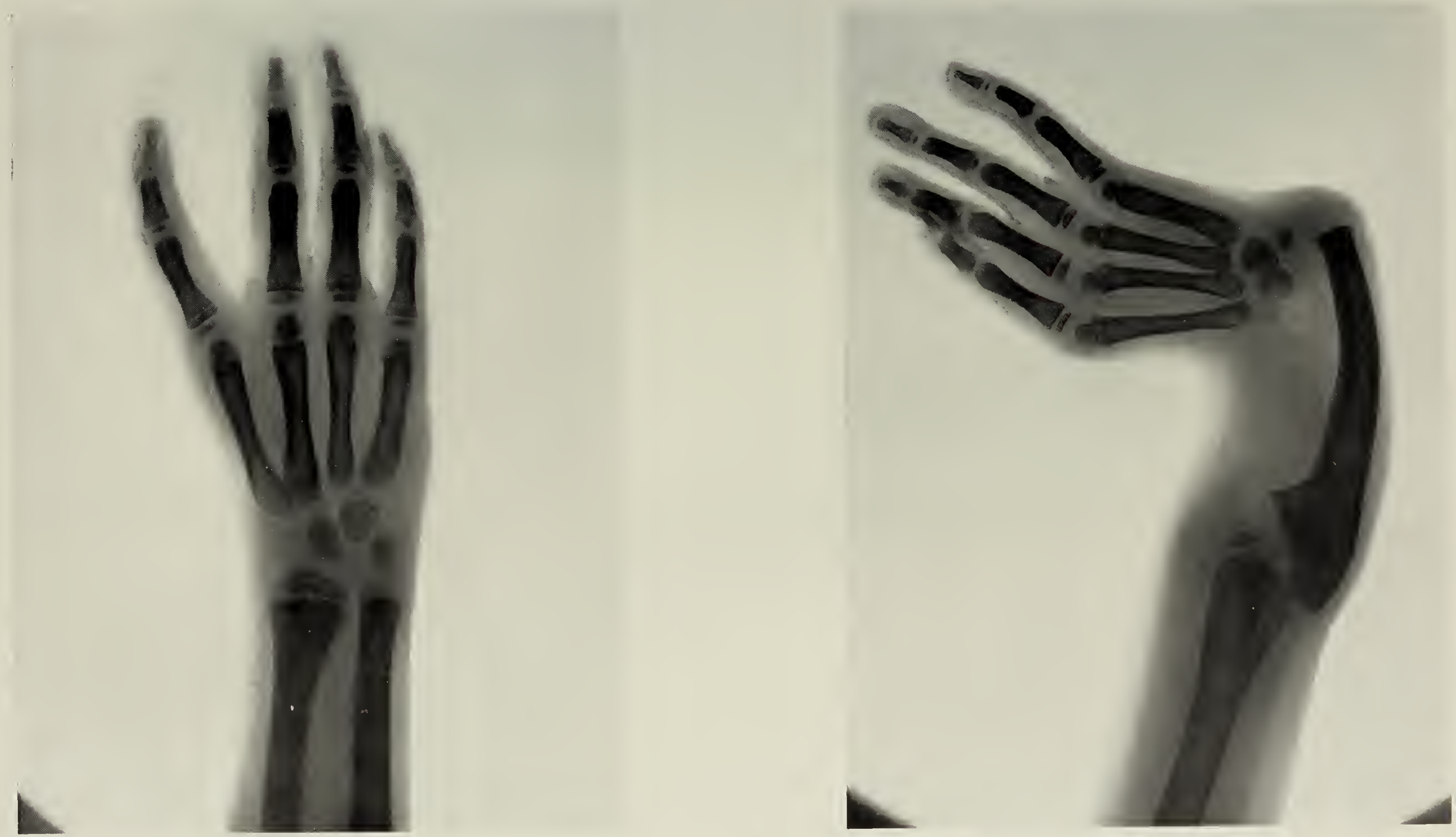
Family History.—Mother healthy. Father healthy. (Father lost both legs as result of war injury).

Brother C.T.E.V.

Ante-Natal History.—Fright at 10 weeks.

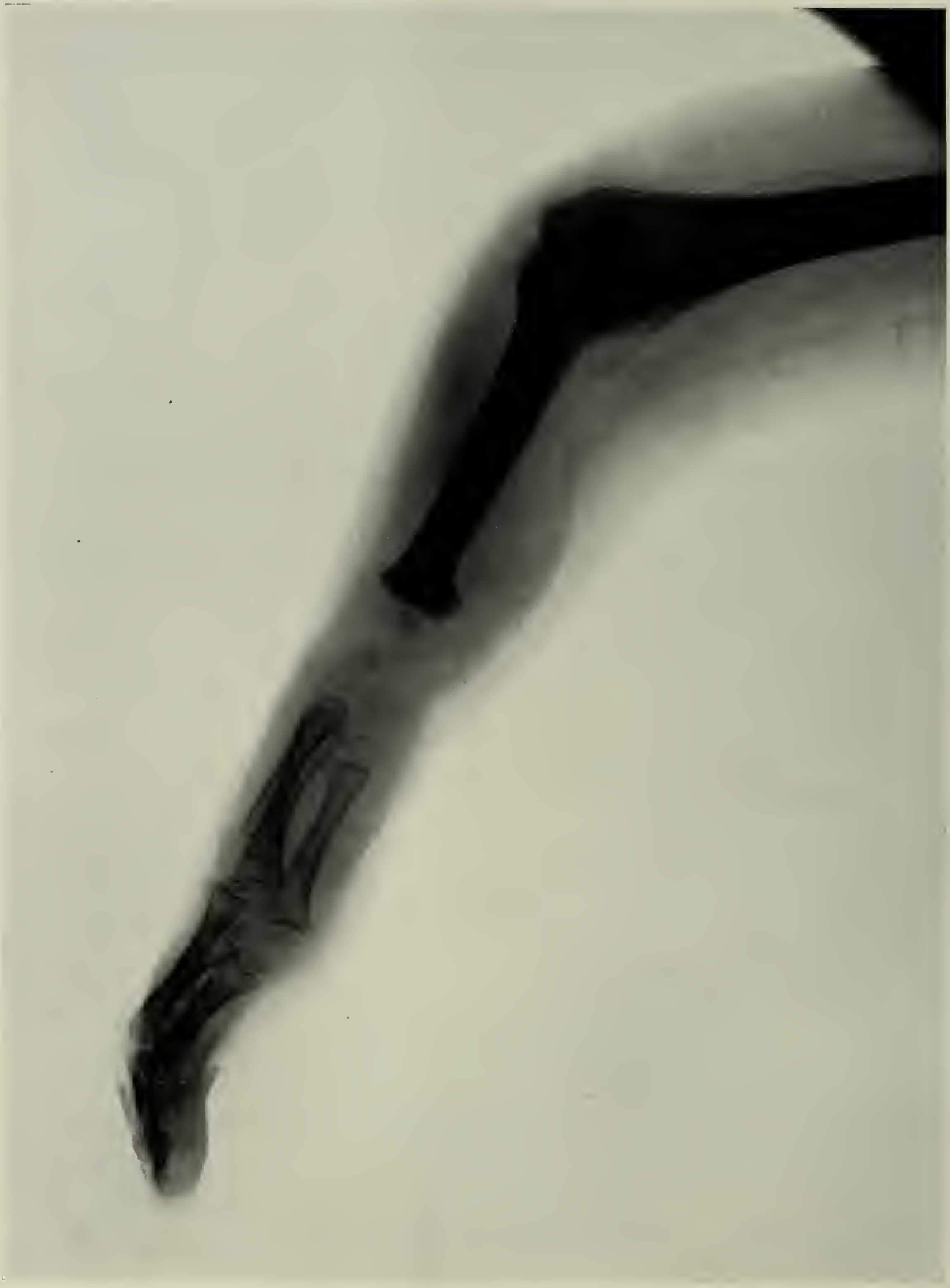
Confinement.—Normal.

The boy is mentally normal. There are deformities of the left arm and the right forearm and hand. There are only four fingers on the left hand. On the right side the radius is absent and there is resulting radial deviation of the hand and absence of the thumb.



LEFT HAND. RIGHT HAND.

CASE III.



RIGHT FOREARM AND HAND.

CASE IV.

Case 4.—T.S. Male. Age 7 years and 1 month.

2nd child in family of two.

Family History.—Mother and father healthy, but both deaf and dumb.

One sister normal.

Ante-Natal History.—Nil, abnormal.

Confinement. Normal.

Mentally very bright. There are deformities of both forearms and hands, and a congenital scoliosis. On the right side there is ankylosis at the elbow joint; the radius and ulna are bowed and shortened, and appear to be fused. The wrist joint is mobile. The hand is held in the supine position, and there is ulnar deviation. There is no thumb nor fifth finger, and the three fingers present are webbed. On the left there is practically no forearm, and it is difficult to determine what part of the radius or ulna is present. The wrist joint is mobile. The fingers are represented by two fused digits (? 3rd and 4th) showing ulnar deviation. There is also a severe scoliosis.

These two cases will be considered together. They are both true congenital anomalies as distinct from accidents.

Tubby (21) states that congenital absence of the radius is unusual, but not especially rare; that 60 per cent. of cases are males; that in slightly more than half the cases the condition is unilateral and more commonly on the right side; and that the thumb is rudimentary or absent. He puts forward as a possible cause amniotic bands and adhesions.

Philip Buckley (22), describing a case of malformation of the forearm, considers that more missing parts should be found if theories of intra-uterine amputation were always true, and that arrested development of bones is the probable explanation in the majority of cases. These deformities correspond to the anomalies of body structure found experimentally in fishes and are probably caused, therefore, either by defect of the germ cell or by deficiency in implantation. In one of these cases both parents are dumb. Does this point to a congenital abnormality of germ protoplasm ? Statistical surveys on a large scale might give some indication on such a question.

Case 5.—R.O. Male. Age 1 year 10 months. 3rd child.

Family History.—Both parents healthy.

Two other children healthy. No defects.

Ante-Natal History.—Nil.

Labour normal. Weight at birth 7¼ lbs.

Normal child except for the deformity of the left hand. All four fingers and the thumb are very much shortened, and the hand as a whole is smaller than the right. There is a nail on the thumb and a rudimentary nail on the fifth finger. There is no trace of a nail on the second, third and fourth fingers. Only one phalanx can be detected in the fingers; but each has two portions distal to the meta-carpal. The thumb moves well and movement is possible by all fingers at the metacarpo-phalangeal joint.

This case might be due to any of the supposed causes of congenital anomalies. The hand gives one the impression that it would have developed normally had it had sufficient room; there is no evidence of any aberration of development. It seems probable, therefore, that this is another example of deformity due to amniotic adhesions.

Conclusion.

This paper is an attempt to give an account of some of the most important experimental embryological research work of recent years, together with a description of five cases and suggested theories of their causation. Collection and statistical survey of such cases would give interesting information on such questions as familial tendencies; the comparative frequency of abortions and deformities in individuals, localities, trades and different social conditions; the relation of uterine infection to abortion and deformity. These are but a few of the questions which can be raised in connection with the production of congenital deformity. If any can be satisfactorily answered progress is maintained.

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Dr. A. V. Stocks sends the following account of an Investigation and an Immunisation Campaign following an outbreak of Diphtheria in the Urmston Urban and Barton-upon-Irwell Rural Districts.

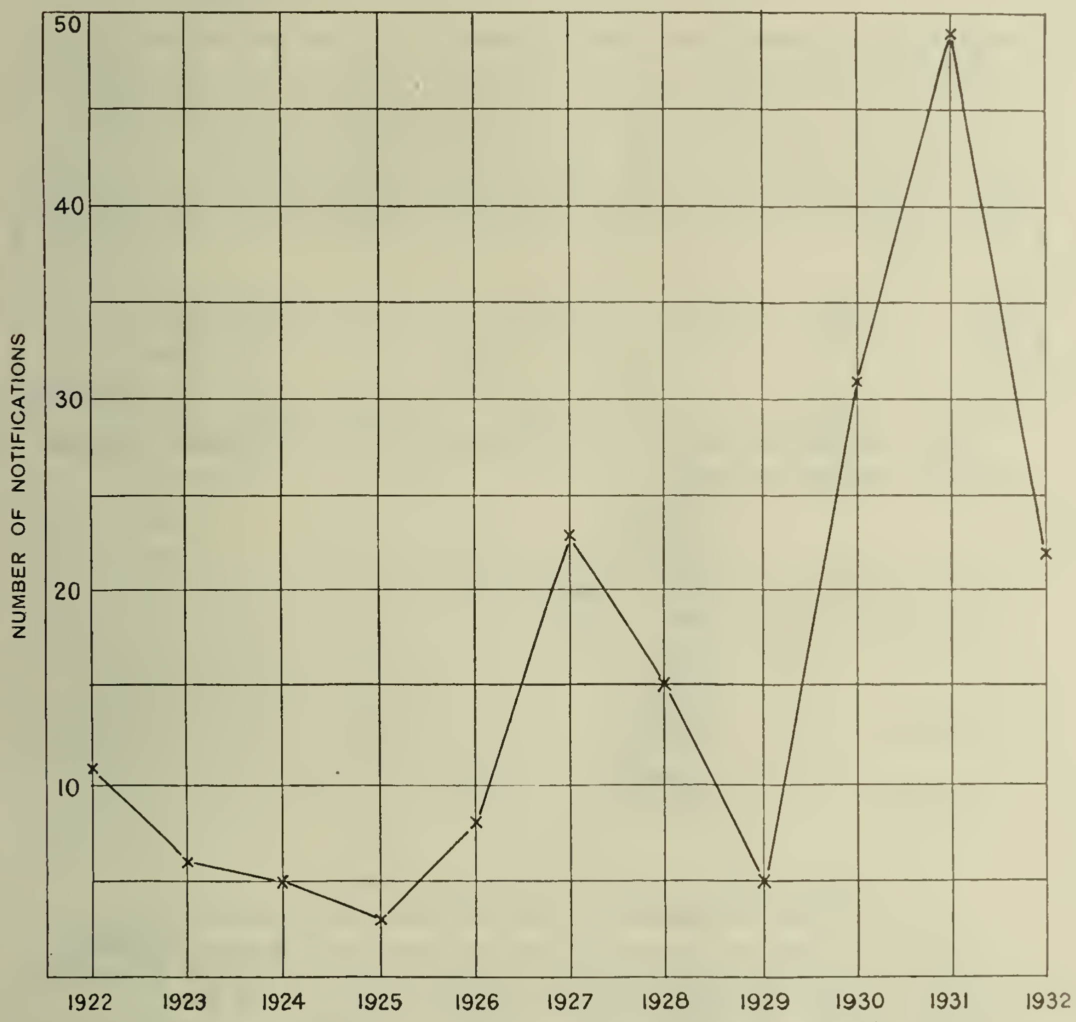
DIPHTHERIA IMMUNISATION.

Diphtheria has been increasingly prevalent in Urmston Urban District and Barton-upon-Irwell Rural District during the past few years (see Fig. 1.) and reached its maximum, since 1922, in the autumn of 1931.

Diphtheria Notifications.

Urmston U.D.C. and Barton-upon-Irwell R.D.C., 1922–1932.

FIGURE 1



A general rise in incidence in England and Wales has been recorded from 1928–30 followed by a fall in 1931 (1).

England and Wales :—

1928 ...	... total cases	... 61,134
1929 ...	... ,, ,,	... 62,774
1930 ...	... ,, ,,	... 72,691
1931 ...	... ,, ,,	... 50,236

In the Lancashire County Area there was a progressive increase from 1926 to 1930 followed by a fall in 1931 (2).

Lancashire County Area :—

1926 ...	... total cases	... 1,286
1927 ...	... ,, ,,	... 1,567
1928 ...	... ,, ,,	... 1,566
1929 ...	... ,, ,,	... 1,620
1930 ...	... ,, ,,	... 1,872
1931 ...	... ,, ,,	... 1,576

The Attack Rate per 1,000 pf the population of all ages in 1931 was as follows :—

Urmston Urban District ...	... 1·94
Barton-on-Irwell Rural District	... 1·97
England and Wales (1930) ...	... 1·84

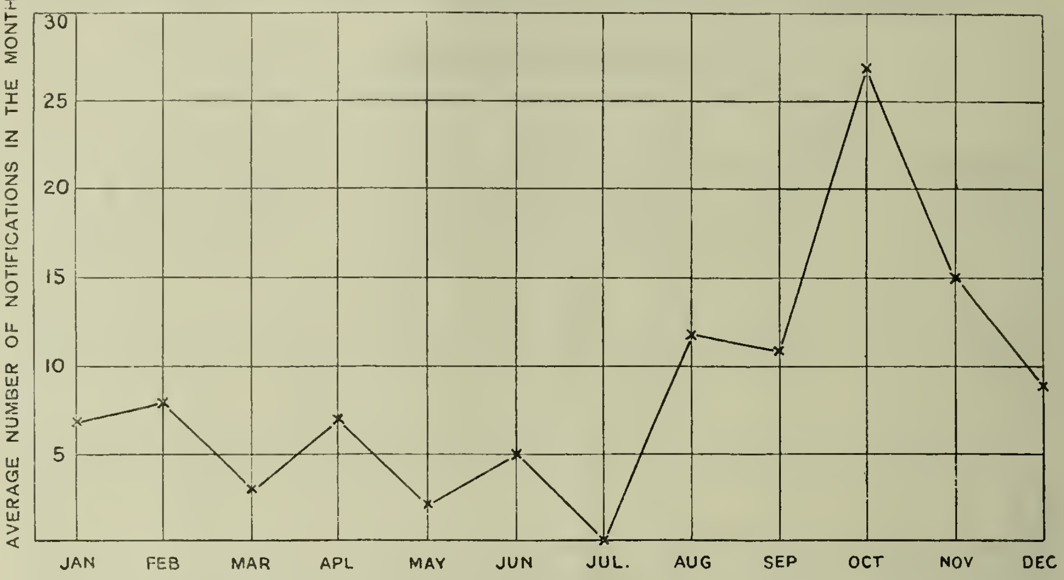
Seasonal Variations.

During 10 years there has been a marked tendency in Barton-on-Irwell Rural District for cases to occur chiefly in the period August to December. (See Fig. 2).

Barton-upon-Irwell R.D.C.

Distribution over the months of the year of the 106 notified cases of Diphtheria in the ten years, 1922–31.

FIGURE 2 SEASONAL VARIATION OF DIPHTHERIA



The notifications in the 10 years 1922–31 numbered 106, distributed as follows over the months of the year :—

January	7
February	8
March	3
April	7
May	2
June	5
July	–
August	12
September	11
October	27
November	15
December	9
Total ...	106

In Urmston the notifications were most numerous in October and January.

Thorne in 1896 (3) described the seasonal variations in diphtheria incidence, and stated the maximum prevalence as being from the second week in September to mid-December, with a secondary rise in Spring about the end of March.

Age Distribution.

In the last 100 cases notified in Urmston and Barton-on-Irwell the age distribution was as follows :—

Ages.	Cases.
0— 4	11
5— 9	45
10—14	21
15—19	8
20—24	7
25—29	2
30—34	2
35 and over	4
	100

Out of this number there were 12 not yet attending school.
65 in attendance at school.
23 over school age.

Sex Distribution.

Males	53
Females	47

Factors Favouring Infection.

1.—Surrounding townships, affected by diphtheria.

Stretford, adjoining Urmston, had 142 cases during 1931. Eccles, adjoining Barton-on-Irwell, had 63 during 1931. Sale (three miles from Urmston) had numerous cases and a school closed.

2.—Rapid Development of Housing.

Dudley (5) has pointed out that not only are new arrivals in any type of community more prone to attack than the older residents, but also the introduction of an "unsalted" population into an established one appears to cause a general increase of prevalence among the rest of the community, with apparent gain of virulence of infection (according to Topley and Greenwood). (6).

Dudley further states that the increase in attack rates appears to be definitely related to the rate at which new susceptibles enter, and old immune residents leave, a community. As his researches are based on observations in residential institutions, they may be difficult to confirm in a larger urban community, but the points raised are apparently confirmed by observations in new housing estates, such as Dr. Thomas's investigations at Dagenham (6). In this connection it is, therefore, of interest to note that the Barton-on-Irwell Rural District showed the second largest number (1,558) of new houses erected in the County Area for the eight years 1922–1929.

New Houses erected. (7).	1928.	1929.	1930.	1931
Barton-on-Irwell R.D. ...	201	313	272	337
Urmston U.D.	74	154	45	76

Population.	1921.	1928.	1929.	1930.	1931.
Barton-on-Irwell R.D. ...	10,110	12,830	13,500	14,670	15,711
Urmston U.D. ...	8,297	8,020	8,244	8,872	9,284

3.—" Carriers."

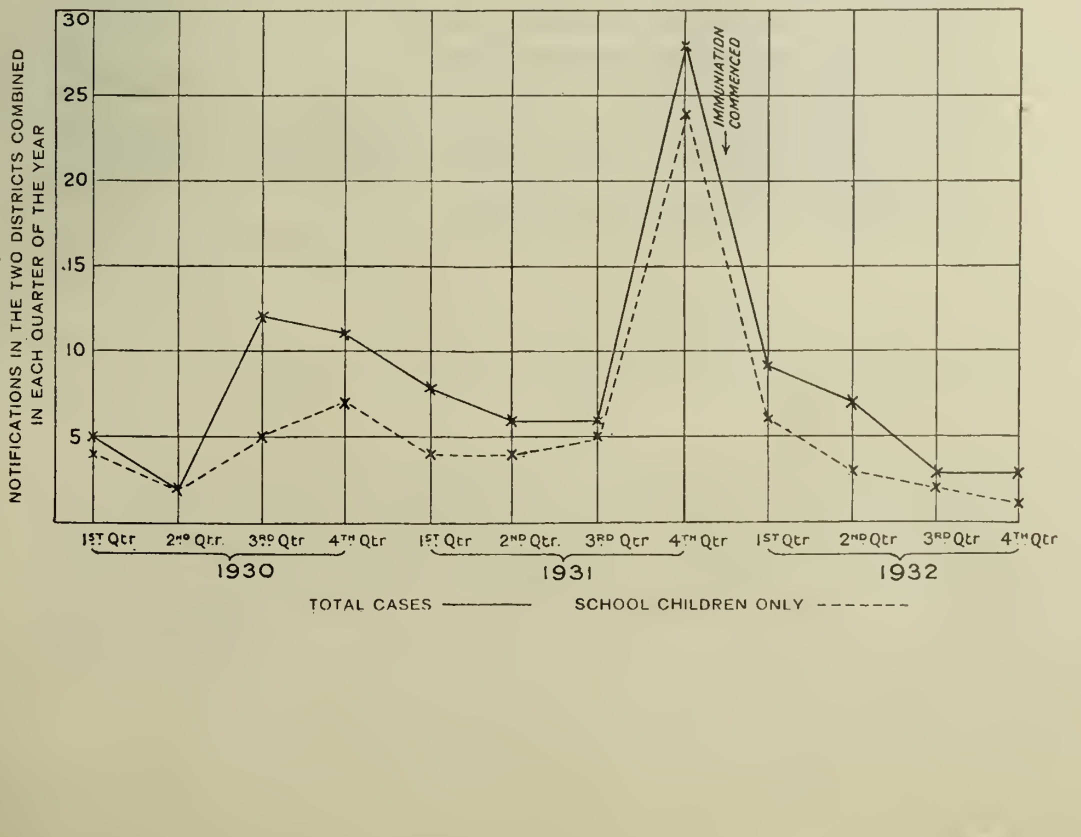
In addition to swabs taken by general practitioners, over 100 swabs were taken at various times in schools and clinics in the autumn and winter of 1931–32, and of these 10 were positive. Several of these were treated as mild cases of diphtheria, but others were undoubtedly carriers of virulent bacilli, as shown by virulence tests at the Public Health Laboratory.

Two Institutions were especially affected—Park Hospital having 13 cases of diphtheria from August, 1930—April, 1931, and Urmston Council School having 31 cases from September, 1929—May, 1932.

Five other local schools had varying numbers of cases during the period covered by Fig. 3 (*i.e.*, 1930–32) but no other school had more than seven notifications in the three year period.

Number of Diphtheria Notifications per quarter in Urmston U.D.C. and Barton-upon-Irwell R.D.C. (excluding Clifton), 1930–32.

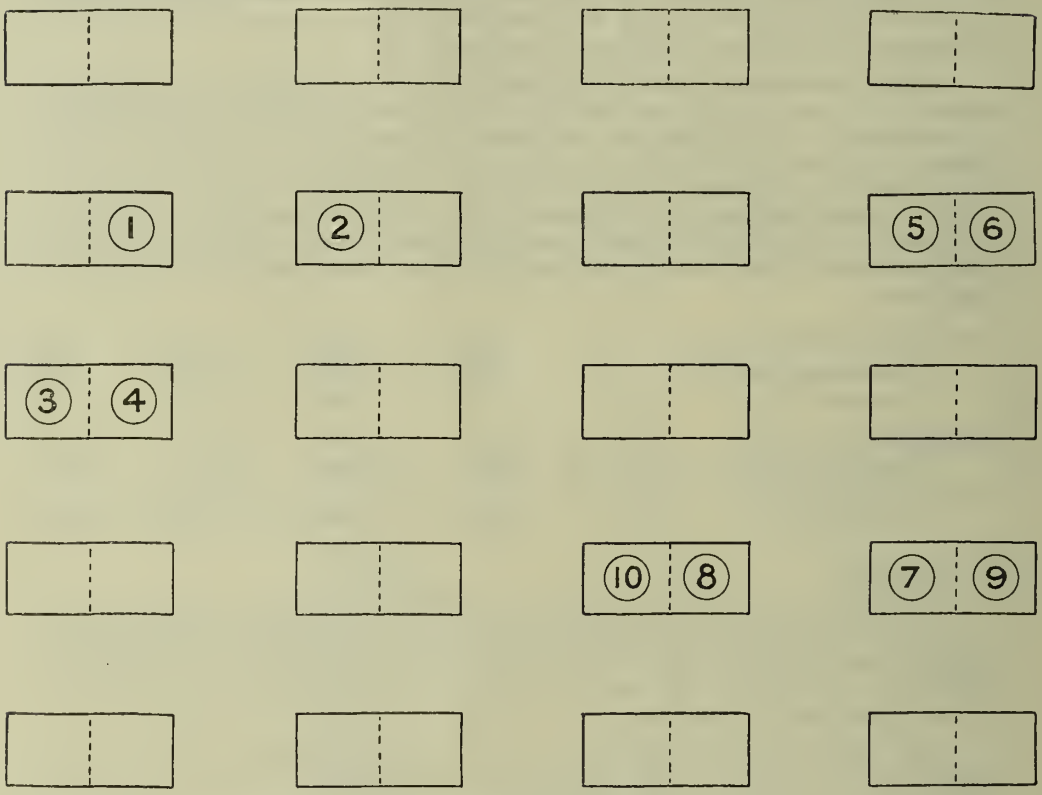
FIGURE 3



In Urmston Council School two classes were especially affected, nine cases occurring in Class "A" and four cases in Class "B." Figs. 4 and 5 showing where the children sat are of interest, as illustrating what part closeness of contact plays in the spread of the disease, and also as showing the presence of "carriers" in the affected classes.

Figure 4.

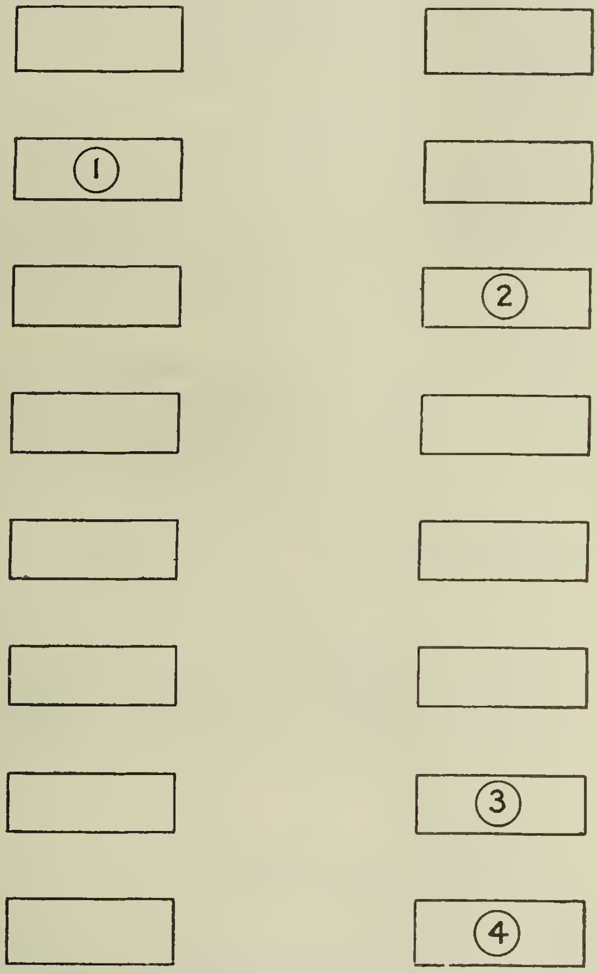
Plan showing position of desks in Form "A" classroom during outbreak of Diphtheria, 1931–32.



(1) Contracted Diphtheria 6th October, 1931.
(2) Contracted Diphtheria 23rd October, 1931.
(3) Contracted Diphtheria 23rd September, 1931.
(4) Contracted Diphtheria 23rd October, 1931.
(5) Found to be a "carrier" in school, 30th October, 1931.
(6) Contracted Diphtheria, 21st October, 1931.
(7) Contracted Diphtheria, 24th October, 1931.
(8) Contracted Diphtheria, 10th February, 1932—Previously refused Immunisation.
(9) Contracted Diphtheria, 13th February, 1932—Previously refused Immunisation.
(10) Found to be a "carrier," April, 1932.

Figure 5.

Plan showing position of desks in Form " B " classroom during the outbreak of Diphtheria, 1931.



(1) Contracted Diphtheria, 17th October, 1931.
(2) Found to be a "carrier," 30th October, 1931.
(3) Found to be a "carrier," 30th October, 1931.
(4) Found to be a "carrier," 2nd November, 1931.

Case 4 in Class "B" (see Fig. 5) had had Diphtheria in a previous outbreak in August ,1930. He was found to be a nasal carrier in October, 1931, and on Schick test was negative.

Case 10 in Class "A" presented puzzling features. She was exposed to infection in October, 1931, when several class mates, including one near by, contracted Diphtheria. In February, 1932, the girl next to her contracted Diphtheria, and in April, a child who had come from another district and was staying in the same house, contracted Diphtheria within a week of arrival. This pointed to the girl as a probable carrier. A swab was taken and was positive ; a virulence test was, unfortunately, inconclusive as no growth could be obtained. Further swabs were negative. To the great surprise of her family doctor, and of the writer, a Schick test proved positive. Immunisation had been previously refused but was now accepted and carried out.

The difficulty in this case was that if she was carrying the virulent bacilli (as the course of events suggested) why did the girl not contract the disease, since she was susceptible ?

If the bacilli were non-virulent it is a curious coincidence that she was three times in close contact with known cases of the disease within a few months.

It was later found, however, that the child visitor to the girl's home contracted the disease from another member of its own family just before leaving home, and not from the girl carrier.

One other carrier case calls for special mention. A boy who was found to be Schick positive in March, 1932, was immunised during the following five weeks. His throat was swabbed for some slight symptom (faucial redness and irritation) early in May, and the result was positive, and on culture a virulent strain was isolated. A Schick test taken some weeks later was negative. No symptoms of Diphtheria were ever present, and the course of events indicated that complete immunity must have been present within 21 days of the third immunising injection of toxoid-antitoxin.

4.—Preventive Measures.

In addition to the search for carriers, exclusion of doubtful cases and contacts (in one case an entire class for a week) was rigorously carried out, but no school was closed as this would have hindered rather than helped the control of the epidemic.

Pencils and penholders used by the affected children were destroyed and school drinking utensils thoroughly and regularly disinfected. Absentees were followed up by the school attendance officer and in all cases of sore throat, feverish illness or nasal discharge, the parents were requested to consult their own doctor without delay.

The local medical practitioners did much to help in controlling the epidemic by collaboration in reporting cases by telephone and enquiring as to possibilities of contact, and in other ways.

Although no fatal case had been reported by the end of November, 1931, some of the cases had been very ill, and it was considered advisable to commence immunisation.

Organisation of Immunisation Campaign.

The school in which it was decided to commence immunisation was the Urmston Council School in which there had been 28 cases during 1930 and 1931, of which 16 were in the three months September to November, 1931.

Fifteen of these were in the mixed department and only one case in the infants' department.

The number of scholars on roll was :—

Infants' Department	293
Mixed Department	677
Total	970

A circular letter was drawn up and sent to all parents of these children stating that immunisation was being commenced, that in the older children a Schick test would be done first, and explaining the significance of this, and that if done at the clinic no charge would be made.

The circular had an attached reply form offering parents four alternative replies :—

(1) Acceptance.
(2) Preference for consulting own doctor.
(3) Request for further information.
(4) Refusal.

About 26 per cent. (255 in all) refused ; 63 preferred to consult their own doctor and many of these were immunised. Those asking for further information numbered 107 and these were invited to short lectures at the clinic held at various times during the winter ; of these parents 63 decided to have the treatment ; some did not attend for the desired information. Fifty-four per cent. accepted treatment (525 in all) in this school. Similar circulars were later sent to the Davyhulme C.E. School where 6 cases of Diphtheria had occurred in 1930–31, and here 46 per cent. accepted (74 in all) ; to Urmston Roman Catholic School where 7 cases of Diphtheria had occurred ; here 70 per cent. accepted (120 in all).

Parents of children under school age, or attending other schools, who requested treatment for their children, were included in the scheme and the full totals are set out in the following table :—

Statistical Summary of Immunisation Campaign, Urmston and District, 1931–32.

School.	Scholars on Register.	Refused Treatment.	Accepted Treatment at Clinic.	Schick Tests.			Immunised after Schick Test.			Immunised without previous Schick Test		
				No. Tested.	Result.							
					+	—	1st dose.	2nd	3rd	1st	2nd	3rd
Urmston Council Mixed Department	677	186	352	351	256	95	253	248	241	1	1	1
Infants' ,,	293	69	172	117	99	18	97	97	91	55	53	53
Total ...	970	255	524	468	355	113	350	345	332	56	54	54
Urmston R.C. ...	173	38	121	85	53	32	53	53	51	35	33	32
Davyhulme C.E. ...	164	55	76	61	54	7	54	54	51	13	12	12
Urmston C.E. Infants' Department ...	112	41	27	15	14	1	13	13	11	10	10	9
Totals ...	1419	389	748	629	476	153	470	465	445	114	109	107
Other Schools ...	...	...	26	16	15	1	15	15	15	10	10	8
Under School Age ...	...	...	29	1	...	1	...	...	...	28	28	26
Grand Total ...	...	...	803	646	491	155	485	480	460	152	147	141

By arrangement with Miss Tipper, County Organising Lecturer of the Public Health Department, a film entitled "Risk of Diphtheria banished" was shown in two local picture houses during the week February 15th to 20th, 1932.

For several months, sessions for Schick testing and immunisation were held four or five times a week at the Davyhulme Clinic, later twice a week, and towards the end of the year, once a week. Considerable and valuable assistance was given by the Local Education Committee's staff in duplication of the large number of circulars required from time to time (several thousand in all) and by head teachers and their staffs in delivery of these through the children to their parents, and returning the replies through the same channel, also in facilitating the keeping of the appointments at the Clinic ; these numbered about 3,000, entailing much detailed work on the part of school and clinic staffs.

Schick Test.

Up to the end of 1932, the number of Schick tests carried out in the district was 948 :—

At Park Hospital (Nursing Staff)—October, 1930, to November, 1931	92
At Davyhulme Clinic—Preliminary tests	650
Re-tests	206
Total	948

Excluding the re-tests, the results of the Schick tests are tabulated below :—

		Positive.	Negative.	Susceptible.
Infants	134	114	20	85%
Junior children ...	369	284	85	77%
Older children ...	143	93	50	65%
Adults	96	19	77	20%
	742			

The figures illustrate the high degree of susceptibility of younger children and the increasing immunity as age advances. A considerable number of young children (152 in all) were not given a preliminary Schick test before immunising. The procedure adopted at the clinic for Schick testing was to have ready two sterilised 1 c.c. Agla glass syringes, one filled with B. W. & Co. diluted toxin, the other with heated toxin for control. The child sat at the side of a table resting each arm in turn on the table whilst the injection of 0·2 c.c. was made intradermally into the left and right forearm respectively after cleansing the skin with ethereal soap. The Schick needles were then changed, and sterilised ; it was found convenient to have about eight of these in use at once to save time in waiting for sterilisation to be finished.

The arms were re-inspected about the third day ; it was found that in some children more than 48 hours was needed for the development of the reaction.

The adults included 92 on the nursing staff at Park Hospital, tested by Mr. Ashton, Pathologist to the Hospital. I am indebted to him and to Dr. Davidson, the Medical Superintendent, for their courtesy in supplying their figures and results. The other four adults were members of the clinic staff and one Head Teacher, all of whom were negative.

The majority of reactions in the children presented no difficulty whatever in reading the results, although there was much variation in the degree of the local reaction provoked on the left forearm.

In the preliminary tests only about 20 pseudo-reactions were recorded, but in the re-tests a very considerable number were met with, making the interpretation of results more difficult. (See further under re-tests below).

Eleven children who had had diphtheria were Schick tested, and the result was negative in each case, in three cases pseudo-negative. The interval that had elapsed since having the diphtheria varied from 1 to 8 years in these cases.

Immunisation.

The total number of children treated with immunising injections at the clinic was 637 up to the end of 1932. This included 485 children who had been found to be Schick positive, and 152 young children who were not previously Schick tested. Not all of these had three injections, but the percentage who had was 94·5. This percentage was highly satisfactory, indicating a strong desire on the part of parents to do their part in securing effective protection.

The numbers attending are set out below :—

	1st dose.	2nd dose.	3rd dose.
Without preliminary Schick test	152	147	141
After Schick test	485	480	460
Totals	637	627	601

This represents a total of 1,865 doses, the material used being B. W. & Co. T.A.M. Toxoid-antitoxin with a dosage of 1 c.c at weekly or fortnightly intervals.

Administratively, weekly intervals are much more satisfactory, but it is said that the immunising power is greater with the longer intervals between doses, and latterly this was arranged.

Every care was taken as regards cleansing of the skin and aseptic precautions generally ; an electric steriliser made sterilising of bowls, forceps and needles an easy matter. All syringes were kept permanently in 5 per cent. carbolic acid. The upper arm was cleansed with ethereal soap and the child held by the nurse while the injection was rapidly made into the muscles of the upper arm. Few children complained of any pain—the skin in that region is less sensitive than in the forearm, and all the children preferred the injections to the intra-dermal Schick test.

Only one child was in the surgery at a time.

No local reactions occurred except in two children, one of whom was found to be very serum sensitive, and another had had anti-tetanic serum a week or two before, following an injury ; in both cases the arm was normal in a few days. General reaction of a mild nature occurred in a small number of children, varying from temporary prostration the next day to a slight malaise and sickness, but no consequences of any moment occurred. Only two children had a serum rash, and that of a slight nature. The younger children, on the whole, were much less affected than the older ones.

Results.

1.—Incidence of Diphtheria in Locality.

This has fallen considerably ; taking into account the seasonal autumn rise referred to previously, the following figures are of interest :—

Notifications of diphtheria in :—	Urmston U.D.	Barton-on-Irwell R.D.	Total.
September 1—December 31/30	3	11	14
,, ,, /31	10	22	32
,, ,, /32	2	3	5

(See also Fig. 3)

The Elementary School population of the Urmston, Davyhulme and Flixton area was 2,426 in March, 1932.

The result of the preliminary Schick tests indicate that one quarter of these children may be regarded as already naturally immune from diphtheria.

To these may now be added 601 children who have been artificially immunised with the full course of the three injections, but allowance must be made for the fact that of the 152 immunised without preliminary Schick test, probably 20 per cent. were already immune. Hence, subtracting 20 per cent. of 152 from 601 leaves 571 children artificially immunised (as will be seen later, not all of these can be regarded as *entirely* immune, but 85 per cent. can be so regarded, and the remainder probably have some increased measure of protection). Hence, the general immunity in the Elementary School population of the district has been increased from 25 per cent. to 45 per cent.

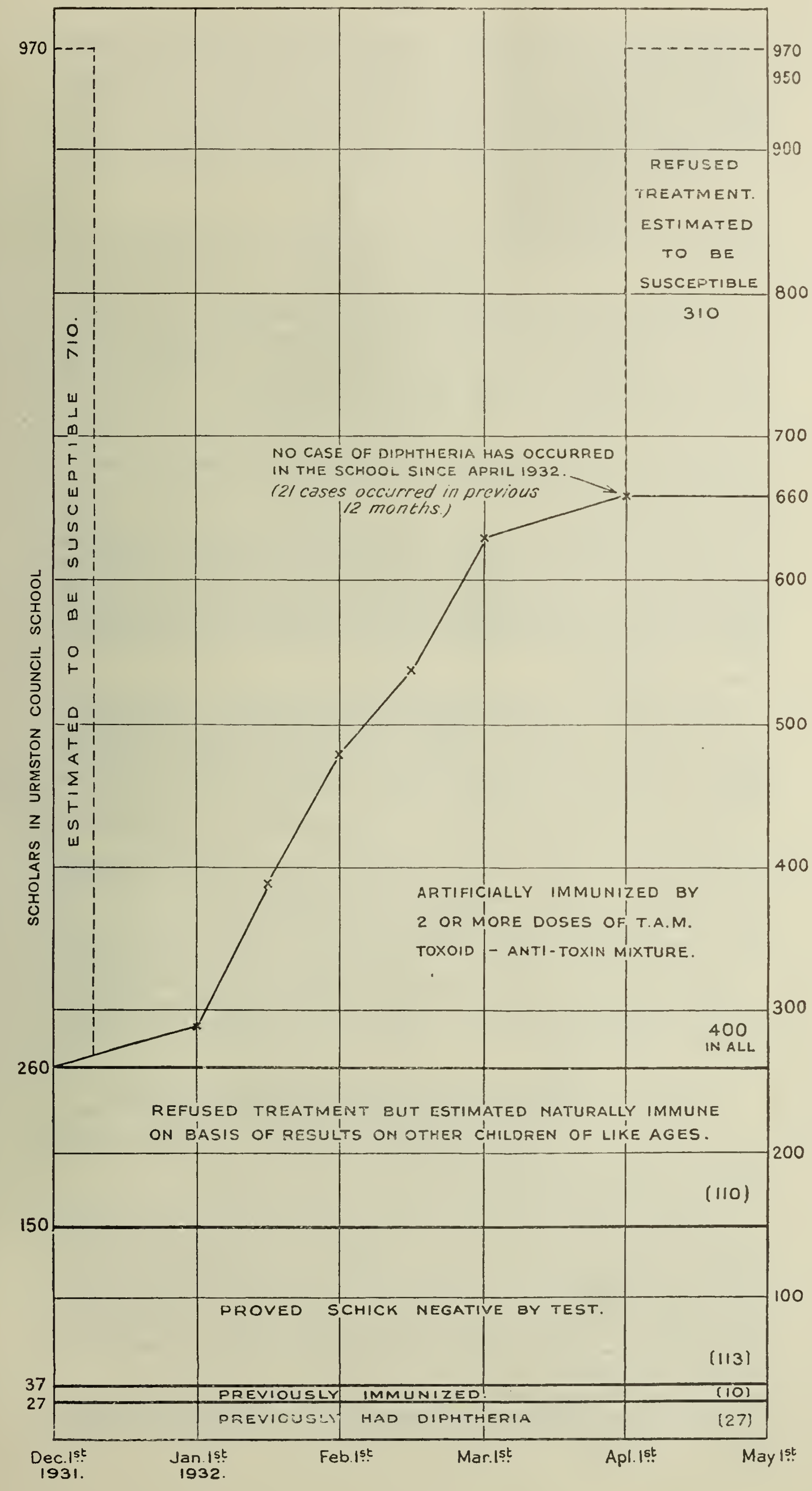
2.—Incidence in Certain Schools.

No case of diphtheria has occurred in Urmston Council School since the 29th March, 1932, by which time about 400 children at that school had been treated. (See Fig. 6).

Two carriers of diphtheria bacilli were found in the school as late as the beginning of May (one being proved virulent on culture from the swab) but no cases of the disease occurred from the contact, probably owing to the rise in the "herd" immunity as shown in Fig. 6.

Rise of "Herd Immunity" in Urmston Council School.

FIGURE 6



The other schools and departments where treatment was extensively organised have had no further cases.

That the immunity enjoyed by these schools is not just due to a general fall of diphtheria incidence in the locality, but to the rise of immunity in the schools themselves is shown by the following facts :—

The numbers on the registers of the first three schools treated were as follows :—(in March, 1932)

Urmston Council	924
Davyhulme C.E.	169
Urmston R.C.	173
Total ...	1,266

or roughly half that of the Elementary School population.

Since the 31st March, 1932, there have been 12 cases of diphtheria (10 among children) in the district, but none of these attended these three schools.

Three were under school age ; three attended Urmston C.E. School ; two Flixton Council School and two attended schools in Stretford.

3.—Individual Immunity.

Retests were made by re-Schick testing 206 children who had been given immunising treatment early in 1931.

Davyhulme C.E. School.

Sixty-two children who were immunised in February and March (one in April) were retested in July—of these 58 gave a Schick negative result (47 of these had previously been Schick positive, the other 11 had been immunised without a preliminary Schick test.) Four showed a positive result (three very faint and one quite definite) and further injections were advised. This shows 6·5 per cent. of partial failures, comparing well with the figure of 8·6 given by Nash and Bousfield (8).

Urmston Council School.

Retests were made in 138 children from this school and six other children in the autumn of 1932. Of these 144 children, 75 were negative and 39 pseudo-negative ; 30 were positive, 15 slightly, 14 definitely and one pseudo-positive. This result was not so satisfactory as in the other retest, and it is difficult to account for the difference. The figure of 20 per cent. partial failures agrees with some other observers' findings (*e.g.* M.O.H. Ogmore) (9).

Owing to the large number of pseudo-reactions the results were difficult to read in some cases.

It is said that results vary in different parts of the country with different observers, but in this case differing results were obtained by the same observers and technique, suggesting some difference in the material used.

The result of the two retests together was that 34 out of 206 were not rendered fully immune by three doses of 1 c.c. T.A.M. Toxoid-antitoxin, or 16·5 per cent.

One or two further doses of this were given according to the strength of the re-Schick reaction at intervals of a fortnight ; no children showed any noticeable reaction as a result of these further doses, which were not given to any case exhibiting a pseudo-reaction.

EFFECT UPON THE "CARRIER RATE."

The suggestion has been made that immunisation may raise the carrier rate.

On theoretical grounds it is conceivable that children artificially immunised and coming into contact with diphtheria may become "carriers," who would otherwise have been cases of the disease ; this would raise the carrier rate.

No evidence that this is occurring in Urmston and district has been forthcoming.

Wholesale swabbing has not been undertaken for reasons of expense, but the results of swabs taken over the past 18 months show a diminishing incidence of carriers ; since immunisation was commenced the proportion found has fallen from 10·6 per cent. of swabs examined to 6·4 per cent. The number examined was not large, but the indications, such as they are, are against an increasing carrier rate. If the proportion of carriers had increased, say, in Urmston Council School, it is reasonable to suppose that fresh cases of Diphtheria would have occurred in the last 11 months among—

(*a*) children whose parents refused treatment (255 in all),

or (*b*) children entering the school since the summer of 1932 and as yet untreated (97 in all).

No case has occurred in that period of 11 months. Stallybrass has pointed out that even where "carriers" have been troublesome in an Institution, systematic Schick testing and immunisation will rid the community of these "carriers" in time (10).

What does seem to have been occurring in Urmston and district is that the disease has transferred its attention to children under school age and to children attending other schools where immunisation has not been as yet undertaken, thus giving indications as to where preventive measures should next be undertaken.

CONCLUSIONS.

1.—Diptheria immunisation offers a safe and effective means of controlling and preventing Diphtheria outbreaks in Elementary Schools. It is particularly useful in cases where "carriers" appear to be causing recurrent outbreaks.

2.—Consent of parents in a typical suburban area was obtained in 55 per cent. of cases in three schools containing over 1,300 children, without propaganda other than a simply worded circular offering the treatment. (This compares well with a figure of 41 per cent. quoted from Edinburgh in a school campaign) (10).

3.—It is necessary that the immunisation should be kept up, as otherwise, by the introduction of fresh susceptibles from time to time, the herd immunity of the school, artificially raised by immunisation, will be gradually lowered to a point where the disease can again cause an epidemic.

4.—While the effect in diminishing the Diphtheria incidence in the community is entirely satisfactory, care should be exercised in promising full immunity in the *individual* case where three injections of 1 c.c. of T.A.M. Toxoid antitoxin are given. Without a retest it is not certain in any individual case that immunity will be fully established. The proportion of successes with three inoculations was about 84 per cent. among 200 children retested, the percentage varying in different schools for reasons not known. In view of the beneficial effect on Diphtheria incidence in the Institutions concerned and in the district, the failure fully to establish immunity in a proportion of those treated should not deter us from using this mode of preventive treatment while awaiting a more potent or more speedy method.

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AN INVESTIGATION INTO CERTAIN ASPECTS OF MYOPIA.

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It is a strongly held view by many Ophthalmologists throughout the world that the continued use of the eyes for close work either produces myopia in school children or is favourable to rapid increase of the condition where it has been established already before entrance to school.

For the first hypothesis no reliable, scientifically accurate, evidence has been adduced, at least certainly not in this country. To establish such a hypothesis it would be necessary to show that the incidence of Myopia was steadily increasing. Moreover as all children are subjected to a similar routine in school with a similar amount of close work, it would necessarily follow, were close work the only factor in the production of Myopia, that the majority of, if not all, children would become myopic.

Such a hypothesis is entirely untenable because not only do the large majority of children not become myopic but it is not even the commonest cause of defective vision found in this country. Moreover, during the period from the establishment of medical inpsection of school children up to the present day, Myopia has preserved a more or less steady percentage of the various causes of defective vision, the percentage being in the neighbourhood of 20 per cent.

The causation of short sight is not dependent on any single factor and certainly not on any simple factor such as the use of the eyes for close work, but rather it is produced by a combination of many factors amongst which heredity, race, environment, mental capacity and the structure of the eye play important parts.

The second hypothesis, so far, has received very strong and influential support throughout the world, so much so that it has led to the establishment, in many parts, of myopic schools or sight saving classes where the affected children are not allowed to read books printed in the ordinary school type, but books printed with a specially large type ; they are only allowed to write in large writing with white on black paper, or black on white, and hand-work occupies a large proportion of the school curriculum. Careful records have been kept of the children attending these schools and it has been found that the limitation of close work has not prevented an increase in the amount of myopia, however much it may have lessened the rapidity of the increase, though even about the latter there must be an element of doubt as to whether the reduction of increase is due to reduced close work or to better hygienic conditions at school and possibly better feeding.

This investigation was undertaken in order to obtain some alternative figures (in the case of those children who, suffering from myopia, continued at ordinary elementary schools) which might be compared with those figures, which are already known, of children who attended myopic classes.

It is unfortunate, that in the course of medical inspection, it is not possible to test the vision of all school children as soon as they enter school, but this presents considerable difficulties owing to the inability of the children to read letters and a retinoscopic test would involve such an expenditure of time that it would not be undertaken. The result is that most children have their vision tested at the age of eight, except in special cases where the child is obviously suffering from defective vision. It thus follows that Myopia is first found in the majority of cases at the time of the second dentition.

An artificial and somewhat arbitrary division has been made in the cases which are found at this age period in that those cases who present high degrees of Myopia are then said to be Progressive or Hereditary Myopes, whereas those who only exhibit low degrees are said to be cases of non-Progressive or Acquired Myopia.

As stated above, there are many more factors involved than the mere acquisition of Myopia or even the hereditary influence, but it has been found convenient for the purpose of this investigation to adhere to these arbitrary divisions and to treat each class in separate tables as though they were separate manifestations of the same defect.

The objects of the enquiry were to determine :—

(1) the amount of increase in Myopia during the elementary school years ;

(2) the amount of increase in Myopia after leaving the elementary school ;

(3) the effect, if any, that Myopia has on the capacity for work and the earning capacity of the person affected ;

(4) the influence that close work in elementary schools may have on the progression of the Myopia ;

(5) the influence of any other factors such as heredity, mental capacity, age, etc., on the ætiology of Myopia.

In order to demonstrate more clearly these various points it has been found convenient to divide the list of cases into several tables, each table dealing with one or two considerations only, rather than to give one table only with all the information obtained complete.

An examination of the tables will show that the complete numbers on each table do not correspond and this is accounted for by the fact that certain cases where the information during the school years was obtainable could not be traced owing to removal to other districts.

The cases have all been given numbers in order to provide greater ease of comparison between the different tables and the same numbers are preserved throughout.

Table I. gives the complete list of cases divided into :—

(*a*) those of High Myopia, and

(*b*) those of Acquired Myopia,

the sexes being separately shown, and it also gives the age at which Myopia was first detected and its amount. The mental capacity at school and the family history where obtainable, are also given in this table.

TABLE I.

(A) HEREDITARY MYOPIA, FEMALE.

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
1	7	–4 –4	Above average, won scholarship	Grandfather, father, paternal uncle and aunt all myopic. Sister mixed astigmatism.
2	7	–4 c̄ – 4 cyl. –4·5 c̄ – 4 cyl.	Two years retarded	No history of any myopia.
3	7	–10 –10	Imbecile	Mother, father and sister all myopic.
4	12	–5·5 –4·5	Two years retarded at least	No history.
5	7	–3 –2 c̄ –1 cyl.	Average	None in the family.
6	7	–3·5 cyl. –2 c̄ –3·5 cyl.	Average	Sister also myopic.
7	7	–8 –8	Very dull and backward	Brother, see No. 20. Another brother very high Myope.
8	6	–1 –1	Above average ...	None in the family.
9	10	–5·5 c̄ –1·5 cyl. –5·5 c̄ –1·5 cyl.	Very dull and backward	Grandmother myopic.
10	9	–0·75 c̄ – 0·5 cyl. –1·25	Below average ...	Mother, Sister No. 11, Brother No. 21 all myopic.
11	8	–1·5 –1·5	Average	Mother, Sister No. 10, } All myopic. Brother No. 21
12	6	–9 c̄ –3 cyl. –9 c̄ –3 cyl.	Very dull and backward	Mother, Brother No. 34 } Myopic. One sister mixed astigmatism.
13	7	–3 –3	Average	Mother Sister } Myopic. Brother mixed astigmatism.
14	8	–4 cyl. –4 cyl.	Very dull and backward	Mother and brother myopic.
15	6	–8 –8	Average	Grandmother, father and brother all myopic.
16	8	–4·5 c̄ –3·5 cyl. –4·5 c̄ –4 cyl.	Under Average ...	No history of any in the family.
17	8	–8 –8	Very dull and backward	Family all very dull. No other myopic.
18	6	–4 –3	Below average ...	No history obtainable.
19	5	–2·5 c̄ –2·5 cyl. –2·5 c̄ –2·5 cyl.	Below average ...	Maternal grandfather myopic.

(A) HEREDITARY MYOPIA, MALE.

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
20	6	–12 –12	Very dull and backward ...	Sister No. 7 Brother High myopes and very dull.
21	7	–3·5 cyl. –3·5 cyl.	Below average ...	Sister No. 10 Sister No. 11 Mother All myopic.
22	6	–9 c̄ –1 cyl. –8 c̄ –1 cyl.	Very dull and backward ...	Sister myopic.
23	6	–7 c̄ –1 cyl. –6 c̄ –1·5 cyl.	Dull and backward	Mother high myope. Younger sister myopic.
24	12	–4·5 c̄ –0·75 cyl. –4 c̄ – 0·75 cyl.	Below average ...	Undersized. None in the family.
25	7	–6 c̄ –1 cyl. –5 c̄ –2 cyl.	Above average ...	Brother and sister myopic.
26	7	–1·5 –1	Two years retarded	One brother No. 27. Another brother also myopic.
27	7	–0·5 c̄ –0·5 –0·5 cyl.	Above average ...	Brother No. 26. Another brother also myopic.
28	7	–1 cyl. –1 cyl.	Average	Brother mixed astigmatism.
29	6	–6 –6	Three years retarded ...	Mother high myope.
30	6	–3 –3	Average	Mother high myope.
31	7	–2·5 –2·5	Above average ...	Great grandfather and mother myopic.
32	7	–1 c̄ –2 cyl. –0·5	Very dull and backward ...	Brother myopic.
33	6	–0·75 –0·75	Average	None in the family.
34	5	–4·5 c̄ –2 –3·5 c̄ –3	Very dull and backward ...	Sister high myope. Mother myopic. Sister mixed astigmatism.

(B) ACQUIRED MYOPIA, FEMALE.

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
35	10	–1 cyl. –0·5	Average	Brother myopic, No. 84.
36	8	–1 –1	Above average ...	Mother myopic.

(B) ACQUIRED MYOPIA, FEMALE.—*continued.*

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
37	10	–3 –3	Above average ...	None in the family.
38	10	–2 cyl. –2 cyl.	Below average ...	None in the family.
39	10	–1·5 –1·5	Average	No history of any.
40	9	–1·5 –1·5	Average	No history of any.
41	7	–1 –1	Average	Brother myopic.
42	6	–0·75 –0·75	Above average ...	Sister myopic.
43	11	–1·5 –2·5	Average	No history of any
44	9	–1 c̄ –2·5 cyl. –0·5	Below average ...	Mother myopic.
45	8	–1 –1	Below average ...	Mother myopic.
46	8	–1 –1·5	Below average ...	None in the family.
47	12	–2·5 c̄ –0·5 cyl. –4·5	Average	No history of any.
48	13	–3·5 –2·5	Above average ...	One (paternal) aunt myopic.
49	11	–2 –2	Average	No history of any.
50	12	–1·5 –1	Average	Brother myopic No. 75. Mother myopic.
51	8	–0·75 –0·75	Above average ...	None in the family.
52	9	–0·5 –0·5	Average	No history.
53	9	–2·5 –2	Average	None in the family.
54	13	–2 –2	Average	None in the family.
55	12	–1 –1	Below average ...	Sister and brother myopic.
56	9	–0·75 –1·25	Above average ...	None in the family.
57	10	–2·25 –2	Above average ...	None in the family.
58	10	–3 –3	Average	No history of any.
59	13	–0·75 –0·75	Average	None in the family.

(B) ACQUIRED MYOPIA, FEMALE.—*continued.*

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
60	9	–0·5 –0·5	Above average ...	Sister myopic No. 61. Mother myopic.
61	8	–2 –2	Above average ...	Sister myopic No. 60. Mother myopic.
62	8	–1·5 –1·5	Dull and backward	Father myopic.
63	10	–1·5 c̄ –1 cyl. –1 c̄ –1 cyl.	Average	None in the family.
64	12	–2 –2	Below average ...	None in the family.
65	13	–2 –2	Average	None in the family.
66	11	–2 –3	Average	None in the family.
67	8	–1·5 –1·5	Above average ...	No history.
68	11	–1·5 –1·5	Average	Sister myopic.
69	11	–2·5 –2·5	Above average ...	None in the family.

(B) ACQUIRED MYOPIA, MALE.

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
70	8	–1 –1	Above average ...	None in the family
71	11	–2·5 –2	Very dull and backward	Brother myopic.
72	9	–1·5 –1·5	Above average ...	No history of any.
73	10	–3 c̄ –2 cyl. –3·5 c̄ –1 cyl.	Average	Sister myopic.
74	11	–2 c̄ –0·5 cyl. –0·5 cyl.	Average	Mother myopic.
75	10	–2·25 –2·25	Average	Mother myopic. Sister moypic No. 50.
76	10	–2·5 –2·5	Average	None in the family.
77	10	Mixed astigmatism	Very dull and backward. Nystagmus	Mother myopic ; also nystagmus.
78	11	–0·75 –0·75	Above average ...	Not traced.

(B) ACQUIRED MYOPIA, MALE.—*continued.*

No.	Age when first detected.	Amount of Myopia when first detected.	Mental capacity at School.	Family History.
79	12	–3 c̄ –1 cyl. –1·5 c̄ –0·5 cyl.	Below average ...	Not traced.
80	9	Plane –2	Average	None in the family.
81	11	–3·5 –3·5	Average	Not traced.
82	13	–1·5 –2·5	Average	Mother and father both myopic.
83	9	–1 c̄ –3 cyl. –1·5 cyl.	Average	No history of any.
84	13	–3 c̄ –2 cyl. –2·5 c̄ –3·5 cyl.	Below average ...	Sister myopic.
85	12	–4 –4	Above average ...	None in the family.
86	8	–0·5 c̄ –2 cyl. –0·5 c̄ –2 cyl.	Average	Brother myopic No. 87. Sister myopic.
87	9	–2 –2	Average	Brother myopic No. 86. Sister myopic.
88	12	–3·5 cyl. –3·5 cyl.	Average	No history of any.
89	12	–3 c̄ –3 cyl. –3 c̄ –3 cyl.	Dull and backward	No history.
90	8	–1·5 c̄ – 1 cyl. –1·5 c̄ – 1 cyl.	Very dull and backward ...	Mother myopic. Sister myopic.
91	12	–2·5 –2	Average	No history of any.
92	9	–3·5 –0·25	Dull and backward	Sister myopic.
93	13	–1·5 –1·5	Average	No history of any.
94	8	–0·75 –0·5	Average	None in the family.
95	12	–2 –2	Above average ...	None in the family.
96	11	–3·5 –3·5	Below average ...	None in the family.
97	13	–2·5 –2·5	Average	None in the family.
98	13	–3 –2·5	Very dull and backward ...	No history.
99	13	–2·5 –2·5	Above average ...	Sister myopic.
100	13	–1 –1	Average	None in the family.

An examination of the above tables will show that the majority of the cases (26) in the hereditary group (34 cases in all) exhibited Myopia before the age of eight. The other cases who were discovered to have Myopia at ages above eight are included in this group because their other characteristics are more typical of this, and in certain cases it is obvious that the Myopia had existed at an earlier age. Certain of the cases only exhibit low degrees of Myopia when first discovered, and can only justly be included in this group when the information given in the succeeding tables and the family histories and the mental capacities are considered.

On the other hand, Table I. (B) contains cases which from the amount of Myopia existing when first discovered might easily have been included in Table (I. A).

It is, in fact, impossible to draw a definite line between the two classes of cases. They are not different manifestations of one defect, but merely different degrees.

Consideration of the mental capacity at school shows that in Group (A) 62 per cent. showed mentality definitely below normal, 23 per cent. average ability and 15 per cent. above average ability. In Group (B) 50 per cent. showed average ability at school, 26 per cent. ability above the average, and 24 per cent. ability below average.

The family history shows in Group (A) that 47 per cent. of the cases have a parental history of Myopia, in 26 per cent. of the cases other members of the family are affected where the parents are apparently free, and 26 per cent. give no family history, though this includes those cases where the history either could not be obtained, or where it was indefinite.

In Group (B) 19·7 per cent. of the cases had one or more parents myopic, 18·2 per cent. showed other members of the family affected without the parents being affected, 33 per cent. gave a definite negative history, 23 per cent. an indefinite negative history, and in 6 per cent. information was not obtainable.

It is interesting that in both groups the maternal influence in transmitting the defect is overwhelmingly greater than the paternal.

In the next Table No. II., the same arrangement of cases is preserved as in the former one, and it deals more particularly with the progression of the Myopia which occurred during the years of school life and the stage which this progression has reached at the present time in the persons investigated. The actual amount of Myopia found during the school years is given under the ages at which the examinations were made. In many cases yearly tests were made and, therefore, full information is available, but in others less frequent tests were made, due to non-attendance for refraction. After leaving school it was not possible to obtain yearly records; in consequence, the actual amount of Myopia present at the time of investigation only is given. In many cases the amount of Myopia, as evidenced by the measurement of the glasses worn and a test by Snellen's Type, was confirmed by actual refraction.

It will be noted that for school children the last test given is usually at the age 13, and this same age has been preserved in the case of children who had proceeded to a Secondary School in order to maintain comparable results.

As all the cases did not receive the same number of refraction tests at School, an average annual progression is given and this can be compared with an average annual progression after the age of 13 years. The average annual progression is based on five years when the persons exceed the age of 18, as it is known that the majority of cases cease to progress after bodily growth ceases, and the maximum height is generally reached at the 18th year. In arriving at the figure for the average annual progression the total increases of Myopia (in the worst diameter) in each eye are added together, divided by two and an average amount for each person is thus obtained. It is thus possible to get a comparison between the average amounts of Myopia during the school years and the years after leaving school.

The figure given for the average annual increase is in dioptres or degrees of Myopia.

The letters nc. are used when no increase of Myopia was detected or when the correcting glasses were not altered.

TABLE II.

A.—HEREDITARY MYOPIA, FEMALE.

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
1	7	−4 −4	8 9 10 11 12 13 nc. nc. nc. nc. nc. nc.	nil	19	−4·5 c̄ −1·5 cyl. −7 c̄ − 1 cyl.	·60
2	7	−4 c̄ −4 cyl. −4·5 c̄ − 4 cyl.	9 10 11 nc. −4·5 c̄ −4 cyl. −4·5 c̄ −4 cyl. −5 c̄ − 4 cyl. −6 c̄ − 4·5 cyl.	·31	15	−4·5 c̄ − 4 cyl. −7 c̄ − 4·5 cyl.	·13
3	7	−10 −10	8 9 11 nc. nc. nc.	nil	24	−10 −10	nil
4	12	−5·5 −4·5	13 nc.	nil	15	−6 −5	·25
5	7	−3 −2 c̄ − 1 cyl.	8 & 9 10 11 glasses not −4·5 −5 obtained. −3·5 c̄ −1 cyl. −4 c̄ −1 cyl.	·5	18	−7 c̄ − 1 cyl. −6 c̄ − 1·5	·39
6	7	−3·5 cyl. −2 c̄ −3·5 cyl.	9 10 11 12 nc. nc. −0·5 c̄ −3·5 cyl. nc. −2·5 c̄ − 3·5 cyl.	·1	19	−1·5 c̄ −4 cyl. −3·5 c̄ −4 cyl.	·25
7	7	−8 −8	8 9 10 11 12 nc. nc. nc. nc. −9 −9	·2	14	−9 −9	nil
8	6	−1 −1	11 12 13 −5·5 −12 −16 −5·5 −10 −11	1·78	15	−16 −12	·25
9	10	−5·5 c̄ −1·5 cyl. −5·5 c̄ −1·5 cyl.	12 13 −6 c̄ −1·5 cyl. nc. −5·5 c̄ −1·5 cyl.	·08	22	−10 c̄ − 4 cyl. −9 c̄ − 1·5 cyl.	1·0
10	9	−0·75 c̄ −0·5 cyl. −1·25	11 12 13 nc. nc. nc.	nil	16	−1·5 c̄ −0·5 cyl. −1·5 c̄ −0·5 cyl.	·25
11	8	−1·5 −1·5	10 11 12 −3·5 nc. −5·5 −3·5 −5·5	1·0	19	−5·5 −5·5 c̄ − 1 cyl.	·08
12	6	−9 c̄ −3 cyl. −9 c̄ −3 cyl.	8 10 −10 c̄ − 3 cyl. nc. −10 c̄ − 3 cyl.	·25	21	−16 c̄ −2 cyl. −16 c̄ −2 cyl.	·62
13	7	−3 −3	13 −5 c̄ −3 cyl. −5 c̄ −3 cyl.	·83	25	annual progression to age 20.	left district.
14	8	−4 cyl. −4 cyl.	Left district, no details available.				
15	6	−8 −8	8 13 −11 −12 −10 −11	·5	16	−12 −12	·16
16	8	−4·5 c̄ −3·5 cyl. −4·5 c̄ − 4 cyl.	10 11 12 13 −4·5 c̄ − 5·5 cyl. nc. nc. nc. −4·5 c̄ − 5 cyl.	·3	15	−4·5 c̄ − 5·5 cyl. −4·5 c̄ −5 cyl.	nil

(A) Hereditary Myopia, Female—*continued.*

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase
17	8	−8 −8	13 −10 −9 c̄ − 2 cyl.	·5	18	−10 −9 c̄ − 2 cyl.	nil
18	6	−4 −3	7 8 9 13 −5 nc. nc. −6·5 −4 −4	·25	14	−6·5 −4	nil
19	5	−2·5 c̄ − 2·5 cyl. −2 c̄ − 2·5 cyl.	6 7 12 nc. nc. −3·5 c̄ − 2·5 cyl. −3·5 c̄ − 2·5 cyl.	·18	18	−4·25 c̄ − 2·75 cyl − 4 c̄ − 3·25 cyl.	·19
			Average Annual Increase, Female	·38			·245

A.—HEREDITARY MYOPIA, MALE.

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
20	6	−12 −12	8 13 −15 −16 −14 −16	·57	17	−18 −17	·37
21	7	−3·5 cyl. −3·5 cyl.	8 9 10 nc. −0·5 c̄ −4 cyl. −1 c̄ − 5 cyl. −1·5 c̄ −4 cyl. −1·5 c̄ − 4·5 cyl. 11 12 13 nc. −2·5 c̄ −5 cyl. nc. −2·75 c̄–5·5 cyl.	·73	15	−2·5 c̄ −4·5 cyl. −2·5 c̄ −5 cyl.	nil
22	6	−9 c̄ − 1 cyl. −8 c̄ − 1 cyl.	7 9 10 11 13 −9 c̄ −2 cyl. −9 c̄ − 4 cyl. nc. nc. nc. −8 c̄ −3 cyl. −8 c̄ − 4 cyl.	·43	17	−9 c̄ − 4 cyl. −8 c̄ − 4 cyl.	nil
23	6	−7 c̄ − 1 cyl. −6 c̄ − 1·5 cyl.	7 8 9 10 −7 c̄ −1·5 cyl. nc. nc. −8 c̄ −1·5 cyl. −7 c̄ −1·5 cyl. −7 c̄ − 1·5 cyl. 11 12 13 nc. nc. −9 c̄ − 3 cyl. −8 c̄ − 2 cyl.	·46	15	−10 c̄ − 3 cyl. −10 c̄ − 2 cyl.	·75
24	12	−4·5 c̄ − 0·75 cyl. −4 c̄ − 0·75 cyl.	13 nc.	nil	15	−4·5 c̄ − 0·75 cyl. −4 c̄ − 0·75 cyl.	nil
25	7	−6 c̄ − 1 cyl. −5 c̄ − 2 cyl.	Left the district. No further information.				
26	7	−1·5 −1	10 12 13 −3·5 −5 −5·5 −1·75 −2·5 −3	·5	23	Continued progression left eye. Detached Retina.	
27	7	−0·5c̄ −0·5 cyl. −0·5 cyl.	10 11 12 Secondary School. −1c̄ −1·5 cyl. nc. nc. −1 cyl.	·2	16	−4c̄ −1 cyl. −1·5c̄ −0·5 cyl.	·44
28	7	−1 cyl. −1 cyl.	8 12 −1c̄ −3 cyl. −2c̄ −3·5 cyl. −1c̄ −3 cyl. −1·5c̄ −3·5 cyl.	·85	20	−7c̄ −3 cyl. −6c̄ − 3 cyl.	·71

(A) HEREDITARY MYOPIA, MALE—*continued.*

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
29	6	–6 –6	8 10 12 13 –8 –10 –17 –17 –8 –10 –10 c̄ –1 cyl. –11 c̄ –2 cyl.	1·28	14	–17 –11 c̄ –2 cyl.	nil
30	6	–3 –3	10 13 –5·5 –6·5 –6 –6·5	·5	18	–10 c̄ –1 cyl. –9 c̄ –2 cyl.	·9
31	7	–2·5 –2·5	10 12 –3·5 –5 –3·5 –4	·4	23	–6 c̄ –1·5 cyl. –6 c̄ – 1 cyl.	·46
32	7	–1 c̄ – 2 cyl. –0·5	9 10 13 –3 c̄ – 2 cyl. nc. –4 c̄ – 3 cyl. –0·75 –1·5 c̄ – 0·5 cyl.	·46	17	–5 c̄ – 3 cyl. –1·5 c̄ – 0·5 cyl.	·13
33	6	–0·75 –0·75	7 8 9 10 11 12 13 –1·5 nc. –1·75 nc. nc. nc. nc. –1·25 –1·5	·13	15	–2 –1·75	·13
34	5	–4·5 c̄ –2 cyl. –3·5 c̄ – 3 cyl.	7 8 9, 10 & 11 –7 c̄ –2 cyl. –7 c̄ –2 cyl. nc. –4·5 c̄ –3 cyl. –6 c̄ –3 cyl. 12 13 –10 c̄ –2 cyl. nc. –9 c̄ –3 cyl.	·69	18	–15 c̄ – 1 cyl. –14 c̄ – 3 cyl.	·9
			Average Annual Increase, Male	·51			·37
			Average Annual Increase, Male and Female Table II. A.	·44			·3

B.—ACQUIRED MYOPIA.—FEMALE.

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
35	10	–1 cyl. –0·5	11 12 13 nc. –2 nc. –2	·42	14	–2 –2	nil
36	8	–1 –1	9 & 10 11 12 nc. –2 c̄ –0·5 cyl. –3 c̄ –0·5 cyl. –1·75 –2·5 13 –4 c̄ –0·5 cyl. –4	·65	17	–5 c̄ –0·5 cyl. –4	·13
37	10	–3 –3	11 12 13 –4·5 nc. nc. –4·5	·5	16	–4·5 –4·5	·17

(B) ACQUIRED MYOPIA, FEMALE—*continued.*

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Annual Average Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
38	8	−2 cyl. −2 cyl.	9 10 11 12 13 nc. nc. nc. nc. nc.	nil	18	−2 cyl. −2 cyl.	nil
39	10	−1·5 −1·5	11 12 13 nc. nc. −2 −2	·17	19	−4·5 −4	·45
40	9	−1·5 −1·5	10 12 nc. −2 −2·5	·25	18	−3·5 −3·75	·23
41	7	−1 −1	8 9 10 11 12 13 nc.	nil	17	−1·5 −1·5	·13
42	6	−0·5 −0·75	7 8 9 10 11 nc. −1·25 nc. −1·25 −1·75 −2 −2·75 −2·75	·32	17	−4 −5	·38
43	11	−1·5 −2·5	12 13 nc. nc.	nil	17	−3 −3·5	·31
44	9	−1 c̄ −2·5 cyl. −0·5	10 11 12 13 −2·5 c̄ −2·5 cyl. nc. nc. −3·5 c̄ −2·5 cyl. −0·5 −0·5	·31	14	−3 c̄ −2·75 cyl. −0·5	nil
45	8	−1 −1	9 10 11 12 13 nc. nc. nc. −3·5 nc. −3·5	·5	15	−3·5 −3·5	nil
46	8	−1 −1·5	9 10 11 12 nc. −1·25 nc. nc. −4	·34	17	−2 −5	·17
47	12	−2·5 c̄ −0·5 cyl. −4·5	13 nc.	nil	19	−4·5 c̄ −1·5 cyl. −4·5 c̄ −1·5 cyl.	·45
48	13	−3·5 −2·5	Secondary School 14 to 16 nc.	nil	23	−4 −3	·1
49	11	−2 −2	12 13 glasses not obtained. −3·5 −3·5	·75	16	−3·5 −3·5	nil
50	12	−1·5 −1	13 nc.	nil	...	Left district.	...
51	8	−0·75 −0·75	9 10 11 13 nc. −2 nc. −4·5 c̄ −0·5 cyl. −1 −2	·55	16	−4·5 c̄ −0·5 cyl. −2	nil
52	9	−0·5 −0·5	10 11 13 nc. −0·75 −1·75 −0·5 −1·5	·28	15	−2·5 −2·25	·375
53	9	−2·5 −2	11 13 −3·5 nc. −3·5	·31	18	−3·5 −3·5	nil
54	13	−2 −2	13 nc.	nil	16	−2·5 −2·5	·17
55	12	−1 −1	13 −2·5 −2·5	1·5	23	−5·5 −6	·65

(B) Acquired Myopia, Female—*continued.*

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
56	9	–0·75 –1·25	10 11 12 nc. nc. nc. Secondary School. 13 14 15 16 17 –1·5 nc. nc. nc. nc. –2	·19	19	–2 –3 c̄ –0·75	·23
57	10	–2·75 –2	12 Secondary School. nc. 12 to 16 nc.	nil	17	–2·75 –2	nil
58	10	–3 –3	11 12 13 nc. nc. –3·5 –3·5	·17	16	–4·5 –4·5	·33
59	13	–0·75 –0·75			19	–0·75 –0·75	nil
60	9	–0·5 –0·5	Secondary School. 12 15 –0·5 c̄ –0·5 cyl. –1 c̄ –0·5 cyl. –0·5 c̄ –0·5 cyl. –1 c̄ –0·5 cyl.	·17	20	–1·25 c̄ –0·5 cyl. –2 c̄ –0·5 cyl.	·19
61	8	–2 –2	Secondary School. 9 10 11 12 13 –2·75 –3 –3·5 –4 –4·5 –2·25 –2·5 –2·5 –2·5 –3	·35	16	–5·5 c̄ –1·5 cyl. –3 c̄ –1 cyl.	·58
62	8	–1·5 –1·5	9 10 11 12 13 nc. nc. nc. nc. nc.	nil	17	–2 –2	·13
63	10	–1·5 c̄ –1 cyl. –1 c̄ –1 cyl.	11 12 13 nc. nc. nc.	nil	20	–2 c̄ –1·5 cyl. –1·5 c̄ –1 cyl.	·15
64	12	–2 –2	13 nc.	nil	21	–3·5 –3	·25
65	13	–2 –2			18	–3·5 –3·5	·30
66	11	–2 –3	12 13 –3 –3·5 –4 –5	·88	17	–4 –5 c̄ –0·5 cyl.	·13
67	8	–1·5 –1·5	9 10 11 12 13 –2·5 –3·5 nc. nc. –4 –2·5 –3·5 –4	·50	20	–4·5 –4·5	·10
68	11	–1·5 –1·5	13 Secondary School. –2 c̄ –0·5 cyl. No details. –2 c̄ –0·5 cyl.	·50	26	–3·5 c̄ –1·5 cyl. –3·5 c̄ –1·5 cyl.	·50
69	11	–2·5 –2·5	12 13 Technical School. –3·5 nc. –3·5	·50	16	–3·5 –3·5	nil
			Average Annual Increase, female ...	·31			·19

B.—ACQUIRED MYOPIA.—MALE.

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
70	8	−1 −1	9 11 12 13 −2 −2 c̄ −0·5 cyl. nc. nc. −2 −2 c̄ −0·5 cyl.				
			Secondary School 14 15 16 17 −2 c̄ −0·5 cyl. −3 c̄ −0·5 cyl. nc. nc. −2·25 c̄ −0·5 cyl. −3 c̄ −0·5 cyl.	·30	21	−3 c̄ −0·5 cyl. −3 c̄ −0·5 cyl.	·20
71	11	−2·5 −2	12 13 nc. −2·5 −2·5	·13	15	−3 −3	·25
72	9	−1·5 −1·5	10 11 12 13 nc. nc. −2·25 nc. −1·75	·13	16	−3·5 −3	·42
73	10	−3 c̄ −2 cyl. −3·5 c̄ −1 cyl.	11 12 13 nc. nc. nc.	nil	17	−3 c̄ −2 cyl. −3·5 c̄ −1 cyl.	nil
74	11	−2 c̄ −0·5 cyl. −0·5 cyl.	12 13 nc. −3 c̄ −1·5 cyl. −1·5 c̄ −1 cyl.	1·0	15	−3 c̄ −2 cyl. −1·5 c̄ −1 cyl.	·13
75	10	−2·25 −2·25	Secondary School. 11 12 13 14 −3 nc. nc. −4 −3 −4	·25	23	−4·5 c̄ −0·75 cyl. −5·5	·48
76	10	−2·5 −2·5	11 12 13 −3 c̄ −0·5 cyl. nc. nc. −3 c̄ −0·5 cyl.	·33	17	−3 c̄ −0·5 cyl. −3 c̄ −0·5 cyl.	nil
77	10	−0·5 c̄ +1 cyl. −0·5 c̄ +1 cyl.	11 12 −0·5 c̄ −0·5 cyl. −0·75 c̄ −1 cyl. −0·5 c̄ −1 cyl. −0·5 c̄ −1·25 cyl.				
			13 −2 c̄ −1·25 cyl. −1·5 c̄ −1·25 cyl.	·50	16	−2·25 c̄ −2 cyl. −1·5 c̄ −3 cyl.	·46
78	11	−0·75 −0·75	Secondary School. 13 15 −2 −2·5 −1·5 −2·5	·50	...	Left district.	·38 (Sec. Sch).
79	12	−3 c̄ −1 cyl. −1·5 c̄ −0·5 cyl.	Secondary School. 13 14 nc. nc.	nil	18	−4 c̄ −1 cyl. −3·5 c̄ −0·5 cyl.	·30
80	9	Plane −2	Secondary School. 13 14 −1 nc. −4	·38	15	−1 −4	nil
81	11	−3·5 −3·5	Secondary School. 12 13 14 −4 −6 −6 −4 −6·5 −6·5	1·38	...	Left district.	
82	13	−1·5 −2·5			18	−4 −5·5	·55

(B) ACQUIRED MYOPIA, MALE—*continued.*

No.	Age detected.	Amount of Myopia.	Progression at School.—Ages.	Average Annual Increase.	Age Now.	Amount of Myopia.	Average Annual Increase.
83	9	−1 c̄ −3 cyl. −1·5 cyl.	11 13 nc. −2·5 c̄ −3·5 cyl. −0·5 c̄ −2·5 cyl.	·44	18	−2·5 c̄ −3·5 cyl. −0·5 c̄ −2·5 cyl.	nil
84	13	−3 c̄ −2·5 cyl. −2·5 c̄ −3·5 cyl.		...	17	−3 c̄ −2·5 cyl. −2·5 c̄ −3·5 cyl.	nil
85	12	−4 −4	13 Secondary School. nc. No details.	nil	26	−5·5 c̄ −1·5 cyl. −8 c̄ −1 cyl.	·80
86	8	−0·5 c̄ −2 cyl. −0·5 c̄ −2 cyl.	9 10 11 12 13 nc. nc. nc. nc. nc.	nil	20	−0·5 c̄ −2 cyl. −0·5 c̄ −2 cyl.	nil
87	9	−2 −2	11 12 13 −3 c̄ −2 cyl. −4 c̄ −2 cyl. nc. −3 c̄ −1·5 cyl. −4 c̄ −1·5 cyl.	·94	21	−4 c̄ −2 cyl. −4 c̄ −1·5 cyl.	nil
88	12	−3·5 cyl. −3·5 cyl.	13 nc.	nil	21	−2 c̄ −6 cyl. −1 c̄ −5 cyl.	·70
89	12	−3 c̄ −3 cyl. −3 c̄ −3 cyl.	13 nc.	nil	19	−5·5 c̄ −4·5 cyl. −5·5 c̄ −4·5 cyl.	·80
90	8	−1·5 c̄ −1 cyl. −1·5 c̄ −1 cyl.	9 10 12 nc. nc. −2·5 c̄ −1 cyl. −1·5 c̄ −1 cyl.	·13	20	No details.	...
91	12	−2·5 −2	13 nc.	nil	17	−3·5 −3	·25
92	9	−3·5 −0·25	13 −4 −2	·28	16	−5·5 −3·5	·50
93	13	−1·5 −1·5			18	−2 −2	·10
94	8	−0·75 −0·5	9 10 11 12 −2 −2·5 −3 c̄ −0·5 cyl. nc. −1·5 −1·5 −1·5 13 −3·5 c̄ −0·5 cyl. −2·5	·52	18	−3·5 c̄ −1 cyl. −3·5 c̄ −1 cyl.	·25
95	12	−2 −2	13 nc.	nil	21	−4·5 −4·5	·50
96	11	−3·5 −3·5	12 13 nc. nc.	nil	18	−4 c̄ −1 cyl. −4·5 c̄ −1 cyl.	·35
97	13	−2·5 −2·5		...	19	−3·5 −2·5	·10
98	13	−3 −2·5		...	18	−4·5 −3·5	·25
99	13	−2·5 −2·5		...	17	−2·5 −2·5	nil
100	13	−1 −1		...	17	−2 −2	·25
			Average Annual Increase, Male ...	·3			·27
			Average Annual Increase, Male and Female Table II B.	·3			·23

The number of cases analysed in Table II., A and B, is far too small upon which to base any reliable conclusions and it is unfortunate that in the years after leaving school it was not possible to obtain more detailed information of the actual progression of the Myopia year by year. Nevertheless, the tables do show that Myopia does increase more rapidly during the years of school life than afterwards, and this applies to every class of case and sex into which the cases are divided. Furthermore, it may be deduced that there is an annual increase in Myopia up to the age of thirteen of almost half a dioptre (or degree) in the hereditary type of case whereas in the acquired type the increase is about a quarter of a dioptre. After the age of thirteen the increase shown in the former is one third of a dioptre, whereas in the latter it is slightly less than a quarter of a dioptre. It is also interesting to note that the relationship between the increase in Myopia during school years and afterwards is almost the same in both classes of cases.

These various considerations would appear to present a *prima facie* case for the theory that school work encourages a more rapid progression of Myopia and this view is further strengthened by the fact that of the persons included, where full details were available, were 25 who received Secondary Education and an analysis of them showed that 9 of them had a greater increase of Myopia up to the age of thirteen, whereas 13 showed a greater increase after the age of thirteen, and 3 showed the same increase, whereas an analysis of the total cases shows a greater increase during school years. But a large number of the other persons became cotton weavers, where the eyes are extensively used at work though not, it is true, so closely as at school, and they show a less increase after school years. Moreover, a detailed examination of the tables in conjunction with Table IV. where the nature of employment is shown, will demonstrate that many persons who did not proceed to a Secondary School also exhibit a greater increase in the Myopia after the thirteenth year.

It has already been stated that Myopia has a close relationship to growth in that it generally ceases to increase when the full height is attained, and it is more probable that the greater increase before the age of thirteen is due to the rapid physical changes which are taking place in the child during these years, and if statistics had been available in each case to the age of fifteen it is probable that an increase in the fourteenth and fifteenth years would have been shown similar to that obtained up to the thirteenth year. This is probably the reason why the Secondary School children, where statistics were available, show a larger number giving a greater increase after the thirteenth year than the average of all the cases.

In both classes of cases, Hereditary and Acquired, there is a regular progression noted from first detection up to the age of full growth though it is true that the annual average is less in the latter than in the former, but it does indicate that it is impossible to differentiate between the two classes of cases, except arbitrarily, and that both classes are merely different degrees of the same defect and not separate manifestations.

The distribution of the average increases in Myopia is shown in Table III. which is merely a grouped resumé of the facts found in Tables II. A. Females, II. A. Males, II. B. Females, and II. B. Males, both before and after leaving school.

TABLE III.

DISTRIBUTION OF ALL CASES.

Average Annual Increase, both eyes, observed 1—8 years.

	0–	*·25–*	*·5–*	*·75–*	*1·0–*	*1·25–*	*1·5–*	*1·75–*	*2·0–*	*Total.*
II. A.F. School	8	4	3	1	1	...	...	1	...	18
II. A.M. ...	3	4	5	1	...	1	...	...	...	14
II. B.F. ...	15	8	7	2	...	...	1	...	...	33
II. B.M. ...	12	6	3	1	1	1	...	...	...	24
All school cases	38	22	18	5	2	2	1	1	...	89
After School Leaving Age.										
II. A.F. ...	9	5	2	...	1	...	...	...	...	17
II. A.M. ...	6	3	1	3	...	...	...	...	...	13
II. B.F. ...	23	8	3	...	...	...	...	...	...	34
II. B.M. ...	12	11	4	2	...	...	...	...	...	29
All after school cases ...	50	27	10	5	1	...	...	...	...	93

Table IV. is given as a matter of interest to show that the presence of Myopia in an individual does not prevent the entrance of the person so affected into the ordinary industrial life of the community, and to present some record of the effect that Myopia has in reducing the industrial efficiency of the individual.

TABLE IV.

A.—HEREDITARY MYOPIA.—FEMALE.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
1	19	Domestic Science Student	...	...	None	Yes	
2	15	Secondary School ...	...	...	...	Yes	
3	24	Not employed	None	None	None	No	Imbecile
4	15	Cotton worker, Reacher	Average	Standard Wage	None	No	
5	18	Clerk	Average	Standard Wage	None	Yes	
6	19	Clerk	Average	Standard Wage	None	Yes	
7	14	Not employed	Reduced	...	Partially	No	Very dull
8	15	Tobacco factory	Average	Standard Wage	None	No	
9	22	Tenter, cotton mill ...	Above Average	Earns good wages	None	No	
10	16	Cotton weaver	Average	Standard Wage	None	No	
11	19	Tenter, cotton mill ...	Average	Standard Wage	None	No	
12	21	Stitcher, Bleach works ...	Average	Standard Wage	None	No	
13	25	Clerk	Average	Standard Wage	None	Yes	
14	...	No information.					
15	16	House Duties and Farm	Average	At Home	None	No	
16	15	Apprentice Weaver ...	Average	Standard Wage	None	No	
17	18	Weaver, Cotton	Average	Standard Wage	None	No	
18	14	Not employed	Just left	School.		No	
19	18	Cotton Weaver	Average	Standard Wage	None	No	

A.—HEREDITARY MYOPIA.—MALE.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
20	17	Casual Labourer	Reduced	Unemployed	Yes	No	Very dull
21	15	Cotton Mill Warehouse ...	Average	Standard Wage	No	No	
22	17	Rubber Worker	Average	Standard Wage	No	No	
23	15	Farm Worker	Average	At Home	No	No	
24	15	Reacher, Cotton Mill ...	Average	Standard Wage	No	No	Work requires keen sight.

A.—Hereditary Myopia.—Male.—Continued.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
25	...	No information	...	...	...	No	
26	23	Wireless Operator, ship ...	Above Average	Standard Wage	Will be affected see Table II.	Technical	Was dull at school afterwards brilliant
27	16	Secondary School ...	...	...	None	Yes	
28	20	Cotton Weaver	Unemployed	...	None	No	
29	14	Just left school	Not employed	...	Probably	No	
30	18	Warehouse Clerk	Average	Standard Wage	None	No	
31	23	Clerk	Average	Standard Wage	None	Yes	
32	17	Labourer, Rubber Works	Reduced	Standard Wage	No	No	Very dull
33	15	Technical School	...	...	...	Yes	
34	18	Dresser, Bleach Works ...	Reduced	Standard Wage	Yes partially	No	Very dull

B.—ACQUIRED MYOPIA.—FEMALE.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
35	14	Not employed	...	...	...	No	Just left school
36	17	Cotton Weaver	Average	Standard Wage	None	No	
37	16	Cotton Weaver	Average	Standard Wage	None	No	
38	18	Home Duties	...	...	None	No	
39	19	Cotton Weaver	Average	Standard Wage	None	No	
40	18	Cotton Weaver	Average	Standard Wage	None	No	
41	17	Agricultural Student ...	...	...	None	Yes	
42	17	Secondary School ...	...	...	None	Yes	
43	17	Rubber Worker	Average	Standard Wage	None	No	
44	14	Warehouse Packer ...	Average	Standard Wage	None	No	
45	15	Cotton Weaver	Above Average	Standard Wage	None	No	
46	17	Domestic Servant ...	Average	Average	None	No	
47	19	Cotton Weaver	Average	Standard Wage	None	No	
48	23	School Teacher	Full	Certified Teacher	None	Yes	
49	16	Cardroom Learner ...	Average	Standard Wage	None	No	
50	25	Housewife	...	...	None	Yes	Was a Clerk

B.—Acquired Myopia.—Female.—Continued.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
51	16	Secondary School... ...	...	...	None	Yes	
52	15	Home Duties	...	...	None	No	
53	18	Clerk	Average	Standard Wage	None	No	
54	16	Home Duties	Average	...	None	No	
55	23	Printer, Rubber Works ...	Below Average	Standard Wage	None	No	
56	19	University Student ...	...	...	None	Yes	
57	17	Nurse, Probationer ...	Average	...	None	Yes	
58	16	Cotton Weaver	Average	Standard Wage	None	No	
59	19	Clerk	Average	Standard Wage	None	No	
60	20	Student Teacher	Training	College.	None	Yes	
61	16	Secondary School ...	...	...	None	Yes	
62	17	Cotton Weaver	Average	Standard Wage	None	No	
63	20	Cotton Weaver	Average	Standard Wage	None	No	
64	21	Cotton Weaver	Under Average	Standard Wage	None	No	
65	18	Cotton Weaver	Average	Standard Wage	None	No	
66	17	Nurse, Probationer ...	Average	Standard Wage	None	No	
67	20	Clerk	Above Average	No Details	None	Yes	
68	26	Clerk	Average	Standard Wage	None	Yes	
69	16	Technical School	...	...	...	Yes	

B.—ACQUIRED MYOPIA.—MALE.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
70	21	University Student ...	...	...	None	Yes	Brilliant
71	15	Casual Labourer, Rubber Works	Average	Standard Wage	None	No	
72	16	Motor Apprentice ...	Average	Standard Wage	None	No	
73	17	Rubber Worker	Average	Standard Wage	None	No	
74	17	Clerk	Average	Standard Wage	None	Yes	
75	23	Clerk	Above Average	Good Salary	None	Yes	
76	17	Slipper Worker	Average	Standard Wage	None	No	
77	16	Motor Apprentice ...	Below Average	Standard Wage	None	No	Nystagmus and dull

B.—ACQUIRED MYOPIA.—MALE.—Continued.

No.	Age Now	Nature of Employment.	Capacity for Work.	Earning Capacity.	Reduction due to Myopia.	Secondary Education.	Remarks.
78	24	Motor Engineer	Above Average	Obtained good post	None	Yes	Brilliant
79	18	Motor Fitter	Below Average	Left District	None	Yes	
80	15	Secondary School ...	...	...	...	Yes	
81	20	Left District	...	...	...	Yes	
82	18	Apprentice Motor Fitter	Average	Standard Wage	None	No	
83	18	Cotton Weaver	Average	Standard Wage	None	No	
84	17	Cotton Worker, Warehouse	Reduced	Standard Wage	None	No	Spinal caries
85	26	Clerk Accountant ...	Above Average	Good Salary	None	Yes	
86	20	Gardener	Average	Standard Wage	None	No	
87	21	Joiner	Average	Standard Wage	None	No	
88	21	Clerk	Average	Standard Wage	None	No	Technical Evening School
89	19	Brass Founder	Average	Standard Wage	None	No	
90	20	Motor Fitter ...	Average	Standard Wage	None	No	
91	17	Poultry Farmer	Average	...	None	No	
92	16	Creeler, Cotton Mill ...	Below Average	Standard Wage	None	No	Very dull
93	18	Motor Fitter	Average	Standard Wage	None	No	
94	18	Clerk	Average	Standard Wage	None	No	
95	21	Joiner	Above Average	Good Wages	None	No	
96	18	Bus Conductor	Average	Standard Wage	None	No	
97	19	Joiner	Above Average	Good Wages	None	No	
98	18	Cotton Weaver	Below Average	Standard Wage	None	No	Very dull
99	17	Shop Assistant	Average	Standard Wage	None	No	
100	17	Motor Apprentice ...	Average	Standard Wage	None	No	

An examination of Table IV. shows that out of the 100 cases investigated, five only show some diminution in industrial efficiency, and in three of this latter number it is difficult to assess how much of the loss is due to Myopia and how much to reduction in mental capacity.

One case, who is not affected at present but is included in the five, will probably be affected because he has developed one of those distressing sequelæ of Myopia (Detached Retina) which so frequently adds individuals to the number of Blind Persons. None of the other cases, except one who has Chorio-Retinitis, showed any ill effects from Myopia apart from loss of vision.

It is interesting to note the diversity of occupation displayed in a list containing so comparatively few people and to note that Myopia produces no limitation in occupation.

SUMMARY.

It must again be stressed that definite conclusions cannot be based on numbers so few, but even numbers as small as these present certain indications and these are summarised below :—

(1) Myopia is a defect with a complex cause, tending to show a steady increase during the period of growth and generally ceasing to increase after growth is complete.

(2) Myopia increases more rapidly up to the age of puberty, the rate of increase then diminishes and, as a rule, no further increase takes place after growth has ceased.

(3) It cannot be divided satisfactorily into different classes of cases, even arbitrarily, as the rate of increase, final amount of defect, and cessation of increase are so approximately similar that they can only be said to be varying degrees of the same defect.

(4) Heredity, especially on the maternal side, is a factor to which considerable weight must be attached in the consideration of its ætiology and the occurrence of Myopia in more than one member of a family so frequently points to a familial predisposition to the occurrence of the defect. Children with one or other parent myopic tend to develop Myopia at an earlier age and to show a more rapid rate of increase in the Myopia.

(5) The occurrence of Myopia, especially of the higher degrees, in persons mentally retarded is another factor of some importance, and also the occurrence of Myopia in individuals with mental capacity above the average would serve to indicate that there is some nervous system factor in its ætiology. In fact, Myopia is quite typically a defect of the brilliant mind as well as of the mind sub-normal.

(6) The mentally defective child on the whole, although using its eyes to a less extent than the average child, shows a greater rate of increase than the average, or above average child, which would serve to show that the use of the eyes for close work in school has but little effect in increasing the amount of Myopia.

(7) An earlier examination for defective sight than the age of eight, as at present practised, is clearly indicated, and the more frequent examination of myopic children and the full correction of any increase of defect, however small, are matters of some importance.

APPENDIX.

STATISTICAL TABLES IN RESPECT OF THE ROUTINE INSPECTION OF ELEMENTARY SCHOOLS CARRIED OUT DURING THE YEAR ENDED 31st DECEMBER, 1932.

TABLE I.—Return of Medical Inspections.

A.—Routine Medical Inspections.

Number of Code Group Inspections—		
Entrants	11,360	
Second Age Group	10,949	
Third Age Group	10,855	
Total		33,164
Number of other Routine Inspections ...		—

B.—Other Inspections.

Number of Special Inspections	28,853	
Number of Re-inspections	42,691	
Total		71,544

TABLE II.

A.—Return of Defects found by Medical Inspection in the Year ended 31st December, 1932.

	Defect or Disease.	Routine Inspections. No. of Defects. Requiring Treatment.	Routine Inspections. No. of Defects. Requiring to be kept under observation, but *not* requiring Treatment.	Special Inspections. No. of Defects. Requiring Treatment.	Special Inspections. No. of Defects. Requiring to be kept under observation, but *not* requiring Treatment.
	Malnutrition	90	423	156	427
Skin.	Ringworm—				
	Scalp	15	2	148	...
	Body	18	1	124	...
	Scabies	20	...	215	7
	Impetigo	251	32	1,545	17
	Other Diseases (Non-Tubercular)	250	179	1,883	96
Eye.	Blepharitis	251	178	497	60
	Conjunctivitis	69	204	478	70
	Keratitis	3	3	32	1
	Corneal Opacities	3	24	10	12
	Defective Vision	1,548	1,739	1,568	863
	Squint	194	281	284	151
	Other Conditions	1	7	36	1
Ear.	Defective Hearing	85	107	246	101
	Otitis Media	142	34	704	36
	Other Ear Diseases	203	68	460	34
Nose and Throat.	Enlarged Tonsils	556	3,852	530	947
	Adenoids	65	218	151	161
	Enlarged Tonsils & Adenoids	422	570	1,107	424
	Other Conditions	...	...	...	...
	Enlarged Cervical Glands (Non-Tubercular)	25	2,730	209	636

TABLE II.—Continued.

	Defect or Disease.	Routine Inspections.		Special Inspections.	
		No. of Defects.		No of Defects.	
		Requiring Treatment.	Requiring to be kept under observation, but *not* requiring Treatment.	Requiring Treatment.	Requiring be kept under observation, but *not* requiring Treatment.
	Defective Speech	3	171	8	79
Heart and Circulation	**Heart Disease—**				
	Organic	19	172	39	95
	Functional	...	943	14	666
	Anæmia	35	143	115	128
Lungs.	**Bronchitis**	191	703	336	232
	Other Non-Tubercular Diseases	10	125	62	55
Tuberculosis.	**Pulmonary—**				
	Definite	...	...	2	4
	Suspected	1	9	10	9
	Non-Pulmonary—				
	Glands	5	9	36	30
	Spine	...	5	3	6
	Hip	2	1	6	3
	Other Bones and Joints	3	3	9	3
	Skin	4	3	4	2
	Other Forms	...	...	...	...
Nervous System.	**Epilepsy**	1	11	14	19
	Chorea	5	19	96	60
	Other Conditions	4	17	17	13
Deformities	**Rickets**	15	150	27	89
	Spinal Curvature	17	115	29	43
	Other Forms	185	660	210	159
	Other Defects and Diseases (excluding Uncleanliness and Dental Diseases)	407	1,139	5,183	1,530

B.—No. of Individual Children found at Routine Medical Inspection to require Treatment (excluding Uncleanliness and Dental Diseases).

Group.	Number of Children.		Percentage of children found to require Treatment.
	Inspected.	Found to require Treatment.	
Code Groups—			
Entrants	11,360	914	8·04
Second Age Group ...	10,949	1,162	10·61
Third Age Group	10,855	1,349	12·42
Total (Code Groups)... ...	33,164	3,425	10·32
Other routine inspections ...	...	...	...

TABLE III.—Return of all Exceptional Children in the Area.

			Boys.	Girls.	Total.
Children suffering from the following types of Multiple Defect, *i.e.*, any combination of Total Blindness, Total Deafness, Mental Defect, Epilepsy, Active Tuberculosis, Crippling, or Heart Disease ... ... *(See Table III. (a) for actual combination of defects, etc.)			76	36	112
Blind (including partially blind)	(i.) Suitable for training in a School for the totally blind	At Certified Schools for the Blind	10	16	26
		At Public Elementary Schools	...	...	...
		At other Institutions	...	...	...
		At no School or Institution ...	2	3	5
	(ii.) Suitable for training in a School for the partially blind	At Certified Schools for the Blind or Partially Blind ...	29	15	44
		At Public Elementary Schools	22	17	39
		At other Institutions	...	...	...
		At no School or Institution ...	8	7	15
Deaf (including deaf and dumb and partially deaf)	(i.) Suitable for training in a School for the totally deaf or deaf and dumb	At Certified Schools for the Deaf	24	18	42
		At Public Elementary Schools	...	...	...
		At other Institutions	...	...	...
		At no School or Institution ...	6	5	11
	(ii.) Suitable for training in a School for the partially deaf	At Certified Schools for the Deaf or Partially Deaf ...	7	13	20
		At Public Elementary Schools	23	12	35
		At other Institutions	...	...	...
		At no School or Institution ...	2	1	3
Mentally Defective	Feebleminded	At Certified Schools for Mentally Defective Children ...	5	6	11
		At Public Elementary Schools	179	115	294
		At other Institutions	...	...	...
		At no School or Institution ...	31	20	51
	Notified to the Local Mental Deficiency Authority during the year		12	13	25
Epileptics	Suffering from severe epilepsy	At Certified Schools for Epileptics	9	8	17
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	10	10	20
		At other Institutions	...	...	...
		At no School or Institution ...	10	10	20
	Suffering from epilepsy which is not severe	At Public Elementary Schools	87	55	142
		At no School or Institution ...	12	7	19

TABLE III.—Continued.

			Boys.	Girls.	Total.
Physically Defective	Active pulmonary tuberculosis (including pleura and intrathoracic glands)	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board...	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	...	...	...
		At other Institutions ...	...	...	...
		At no School or Institution ...	2	5	7
	Quiescent or arrested pulmonary tuberculosis (including pleura and intrathoracic glands)	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board...	...	...	...
		At Certified Residential Open Air Schools ...	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	17	18	35
		At other Institutions ...	...	...	...
		At no School or Institution ...	3	3	6
	Tuberculosis of the peripheral glands	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board...	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	59	62	121
		At other Institutions ...	...	...	...
		At no School or Institution ...	8	3	11
	Abdominal tuberculosis	At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board...	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	7	3	10
		At other Institutions ...	...	...	...
		At no School or Institution ...	...	...	...
	Tuberculosis of bones and joints (not including deformities due to old tuberculosis)	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board	...	...	...
		At Public Elementary Schools	30	19	49
		At other Institutions ...	...	...	...
		At no School or Institution ...	14	16	30
	Tuberculosis of other organs (skin, etc.)	At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board...	...	...	...
		At Public Elementary Schools	10	7	17
		At other Institutions ...	...	...	...
		At no School or Institution ...	2	1	3

TABLE III. Continued.

			Boys.	Girls.	Total.
Physically Defective (*contd.*)	Delicate Children *i.e.*, all children (except those included in other groups) whose general health renders it desirable that they should be specially selected for admission to an Open Air School	At Certified Residential Cripple Schools	...	...	...
		At Certified Day Cripple Schools	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	180	181	361
		At other Institutions	...	...	...
		At no School or Institution ...	21	19	40
	Crippled Children (other than those with active tuberculous disease) who are suffering from a degree of crippling sufficiently severe to interfere materially with a child's normal mode of life	At Certified Hospital Schools ...	33	36	69
		At Certified Residential Cripple Schools	...	...	...
		At Certified Day Cripple Schools	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	382	343	725
		At other Institutions	...	...	...
		At no School or Institution ...	49	47	96
	Children with heart disease, *i.e.*, children whose defect is so severe as to necessitate the provision of educational facilities other than those of the public Elementary School	At Certified Hospital Schools ...	...	...	...
		At Certified Residential Cripple Schools	...	...	...
		At Certified Day Cripple Schools	...	...	...
		At Certified Residential Open Air Schools	...	...	...
		At Certified Day Open Air Schools	...	...	...
		At Public Elementary Schools	41	51	92
		At other Institutions	...	...	...
		At no School or Institution ...	6	19	25

TABLE IIIA.—COMBINATION OF MULTIPLE DEFECTS.

Combination of Defects.	Boys.		Girls.		Total.
	Not at School	At Elementary or Special School or Institution.	Not at School	At Elementary or Special School or Institution.	
Total Blindness and Total Deafness	1	...	...	...	1
Total Blindness and Mental Defect	5	...	1	...	6
Total Blindness, Mental Defect and Epilepsy	1	...	...	...	1
Total Blindness, Mental Defect and Crippling...	1	...	...	...	1
Total Deafness and Mental Defect	1	...	1	1 (Inst.)	3
Total Deafness and Epilepsy ...	...	...	1	...	1
Total Deafness and Crippling ...	1	*1 (S.S.)	...	...	2
Mental Defect and Epilepsy ...	11	3 (E.S.)	6	1 (E.S.)	21
Mental Defect and Active Tuberculosis	1	...	...	...	1
Mental Defect and Crippling ...	27	6 (E.S.)	12	2 (E.S.)	47
Mental Defect and Heart Disease ...	2	1 (E.S.)	2	1 (E.S.)	6
Mental Defect, Epilepsy and Crippling...	2	...	1	1 (E.S.)	4
Mental Defect, Active Tuberculosis and Crippling	1	...	...	...	1
Epilepsy and Crippling	2	1 (E.S.)	...	2 (E.S.)	5
Epilepsy, Active Tuberculosis and Crippling...	...	1 (Inst.)	...	...	1
Active Tuberculosis and Crippling...	3	...	...	...	3
Active Tuberculosis and Heart Disease	1	...	1	...	2
Crippling and Heart Disease ...	...	3 (E.S.)	2	1 (E.S.)	6
	60	16	27	9	112

* Royal Schools for the Deaf, Old Trafford.

TABLE IV.—RETURN OF DEFECTS TREATED DURING THE YEAR ENDED 31ST DECEMBER, 1932.

TREATMENT TABLE.

Group I.—Minor Ailments (excluding Uncleanliness).

DISEASE OR DEFECT.	No. of Defects treated or under Treatment during the year.		
	Under Authority's Scheme.	Otherwise.	Total.
Skin—			
Ringworm—Scalp	122	22	144
Ringworm—Body	197	17	214
Scabies	198	26	224
Impetigo	2103	93	2196
Other Skin Diseases	1167	209	1376
Minor Eye Defects	1471	203	1674
Minor Ear Defects	1270	136	1406
Miscellaneous ... ... (*e.g.*, minor injuries, bruises, sores, chilblains, etc.).	6253	603	6856
Total	12781	1309	14090

Group II.—Defective Vision and Squint.

DEFECT OR DISEASE.	NO. OF DEFECTS DEALT WITH.			
	Under the Authority's Scheme.	By Private Practitioner or at Hospital.	Otherwise.	Total.
Errors of Refraction (including Squint)	6191	112	80	6383
Other Defect or Disease of the Eye	302	...	...	302
Total	6493	112	80	6685

Total number of children for whom spectacles were prescribed :—

(*a*) Under the Authority's Scheme	4666
(*b*) Otherwise	170

Total number of children who obtained or received spectacles :—

(*a*) Under the Authority's Scheme	4076
(*b*) Otherwise	167

Group III.—Treatment of Defects of Nose and Throat.

NUMBER OF DEFECTS.

RECEIVED OPERATIVE TREATMENT.			Received other forms of Treatment.	Total Number Treated.
Under the Authority's Scheme.	By Private Practitioner or Hospital.	Total.		
1994	163	2157	189	2346

TABLE IV.—continued.

Group IV.—Dental Defects.

(1) No. of children who were :—

(*a*) Inspected by the Dentist—

Routine Age Groups	Age 5	7785	Total	57534
	Age 6	7065		
	Age 7	7629		
	Age 8	7366		
	Age 9	6679		
	Age 10	6480		
	Age 11	5956		
	Age 12	4827		
	Age 13	3079		
	Age 14	668		
Specials				4335
			Grand Total	61869

(*b*) Found to require treatment	45623
(*c*) Actually treated	28491

(2) Half-days devoted to	Inspection ...	594	Total	6116
	Treatment ...	5522		
(3) Attendances made by children for treatment				48546
(4) Fillings ...	Permanent teeth ...	21991	Total	24828
	Temporary teeth ...	2837		
(5) Extractions	Permanent teeth ...	11659	Total	67791
	Temporary teeth ...	56132		
(6) Administrations of general anæsthetics for extractions				3001
(7) Other operations	Permanent teeth	11421	Total	19636
	Temporary teeth	8215		

Group V.—Uncleanliness and Verminous Conditions.

(1) Average No. of re-visits per school made during the year by the School Nurses	6·46
(2) Total No. of examinations of children in the Schools by School Nurses	196,983
(3) No. of children found unclean by Nurses at re-visits ...	8,853